MASTER THESIS IN FINANCE

"EQUITY-LIKE MANDATORY CONVERTIBLES: A CAPITAL RAISING ALTERNATIVE"

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Abstract

Hybrid securities has played an important role in helping firms with their specific business strategy challenges by mitigating market imperfections and increasing sources of capital and costs efficiency through the deep customization they generally allow. In this work, I study equity-like mandatory convertible securities, its issuers' characteristics, needs and challenges. These securities are dividend enhanced, automatically converted into common equity at maturity and have either limited or capped upside potential while fully participating in the downside losses. I find that firms issuing mandatory convertibles have greater non-debt tax shields and lower corporate tax rates, suggesting a tax exhaustion state. Issuers also display higher default probability, lower levels of internal funds, liquidity, solvency and financial stability and, more importantly, a deterioration of these variables close to the offering, which supports the choice for a safer option to raise capital whenever firms are financially troubled, highly levered and/or generally incapable of complying with future debt commitments. Despite some industry biasedness, some evidence shows that managers support their decisions on industry target benchmarks (e.g. indebtedness levels) and that equity-like mandatory convertible securities help firms with sequential financing needs.

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LIST OF ABREVIATIONS

ACES	-	Automatically Convertible Equity Securities
TRACES	-	TRust ACES
DECS	-	Dividend Enhanced Convertible Stock
PEPS	-	Premium Exchangeable Participating Shares
PERCS	-	Preferred Equity Redemption Cumulative Securities

PERQS	-	Performance Equity-Linked Redeemable Quarterly-Pay Securities
PHONES	-	Participating Hybrid Option Note Exchangeable Securities
PRIDES	-	Preferred Redeemable Increased Dividend Equity Securities
FELINE PRIDES	-	Flexible Equity-Linked Exchangeable PRIDES
PRIZES	-	Participating Redeemable Indexed Zero-premium Exchangeable Securities
STRYPES	-	Structured Yield Product Exchangeable for Common Stock
TARGETS	-	Targeted Growth Enhanced Terms Securities
YES	-	Yield Enhanced Stock

1. Introduction

In the last two decades, financial innovation has played an important role in increasing the number of sources of capital and the costs efficiency of raising capital. The new hybrid securities, created every year, allow for customization of firms' specific needs, mitigate market imperfections and help issuers in their business strategy specific challenges.

1.1 Research Question and Objectives

In this work, I analyze equity-like mandatory convertible securities, its issuers' characteristics, needs and challenges. My main objective is to understand the motivations underlying the issue of this specific type of securities and how these affect the issuing firms.

These securities exist under the form of various acronyms, depending on the underwriting investment bank, being the two most popular forms PERCS and DECS.

Although mandatory convertible securities feature a variety of payoff structures, they have three fundamental features: i) they are automatically converted into ordinary shares at maturity; ii) they have either limited or capped upside potential, as compared with its underlying common stock, while frequently participate fully in issuers' losses, and iii) they are dividend enhanced since its dividend yield is typically higher than that of the underlying common stock.

1.2 Academic Contribution

Research about equity-like mandatory convertible securities, besides scarce and generally outdated, is still very fragmented, with few theoretical background and empirical support. The most abundant and more directly related research studies convertibles in general, preferred stock and the choice between debt-like and equity-like securities and/or convertibles.

In this sense, this works aims to bring some attention and enlightening to this field of study, particularly to the financial innovation introduced by the specificities of equity-like mandatory convertible securities typical features, in terms of how they are especially able to suit firms' specific needs and challenges when raising capital.

1.3 Structure

This work is organized as follows: in section 2, I provide a brief theoretical framework of equity-like mandatory convertible securities. In section 3, I link these specific instruments with the existing literature on mandatory convertibles, general convertibles, capital structure, trade-off theory and agency costs theory. In section 4, I describe the data and methodologies used in the empirical part of this work. In section 5, I provide the empirical results, for the hypotheses aided in section 3, and analyze the conclusions. Finally, in section 5, I provide a summary of the discussion of results and a brief conclusion.

2. Equity-Like Mandatory Convertibles

2.1 Ordinary Convertible Securities

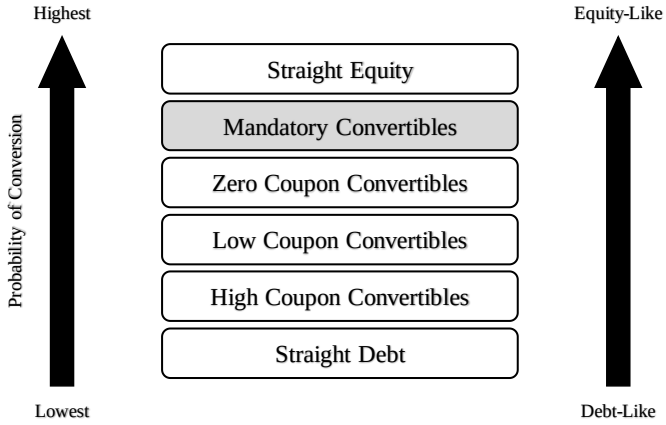
Ordinary convertibles are instruments that can be converted by its holder into the underlying ordinary shares at a pre-specified price and at, or before, a pre-specified date. Frequently, they can also be redeemed at the option of its issuer.

In its essence, these instruments are typically under the form of preferred shares or bonds. Because they are convertible into common stock, these securities correlate with the movements of its underlying stock.

Both convertible debt and convertible preferred stocks are hybrid instruments. In fact, these securities have both equity and debt features, like common stock, they benefit from the appreciation potential of issuer's ordinary shares and, like bonds, they can have cash redemption at maturity and fixed coupon payments.

In this sense, ordinary convertibles can be tailored to look more like bonds or more like equity. For instance, the higher the coupon paid, the lower the probability it will be converted and/or the lower the conversion price, the higher the probability it will be converted. The higher the probability of conversion, the more equity-like the instrument will be.

Figure 1 – Probability of conversion as a criterion to equity or debt behavior of convertibles



Convertible securities are often referred as a mean to raise equity "through the backdoor". The three main reasons firms use convertibles to raise external capital are: i) the conversion feature enables issuers to obtain equity financing on a deferred basis, avoiding the immediate dilution on old stockholders' wealth and, partially, the often negative price reaction; ii) they generally require fewer covenants and preserve additional debt capacity as investors base is usually different, and iii) the conversion feature often allows issuers to benefit from lower coupon or dividend rates, as compared with non-convertible securities.

From the issuers' standpoint, these instruments are often referred as a useful mean to reduce the costs of information asymmetry, which can make equity financings particularly costly for smaller firms and/or firms with limited additional debt capacity.

On the other hand, convertibles appeal to a variety of investors, with different risk profiles and investment goals. Common investors of convertibles are dedicated convertible funds, which look for upside opportunities and limited downside, hedge funds, more interested in arbitrage opportunities, equity funds, which use convertibles to smooth portfolio volatility, and high-yield funds, which typically invest in convertibles as an alternative to fixed-income investments.

2.2 Mandatory Convertibles[1]

Although mandatory convertible securities feature a variety of payoff structures and different denominations according to the investment bank underwriting the offer, they perform very much

[1] The theoretical base proposed by Arzac (1997) on mandatory convertibles is mostly the starting point of this research paper and, even though I will challenge his hypotheses later, for this theoretical section, they will be considered true.

like the underlying ordinary share and have three fundamental features: i) they are automatically converted into ordinary shares at maturity; ii) they have either limited or capped upside potential, as compared with its underlying common stock, but frequently participate fully in issuers' losses, and iii) the dividend yield is typically higher than that of the underlying common stock.

Like general convertible securities, mandatory convertibles also help firms reduce the costs of information asymmetry, allowing them to raise capital without giving away equity too cheaply, or paying a high interest rate on an alternative debt source.

According to Arzac (1997), firms issuing equity-like mandatory convertibles are usually larger, highly leveraged and/or temporarily "financially troubled" that wants to raise capital while avoiding unnecessary dilution and underpricing.

"Much as convertibles accomplish for smaller growth firms, mandatory convertibles enable large issuers with growth (or recovery) prospects that may not be fully reflected in their current stock prices to signal their confidence"

(Arzac, 1997)

Mandatory convertibles are particular appropriate to narrow the gap of information between investors and managers because, although they perform like the underlying ordinary shares, they are less sensitive than straight equity or debt to changes in risk of the issuer. There are two offsetting effects to changes in issuer's risk after the issuance of such instruments: i) the claim to the underlying decreases in value but, ii) the option on the underlying, which is built in the convertible, becomes more valuable due to the higher volatility of the underlying. [2]

Some other benefits of issue mandatory convertible securities are: i) they allow firms to issue less costly delayed common equity; ii) they often receive a full equity credit by rating agencies and regulators; iii) they limit excessive financial default risk by substituting interest payments for dividends, which can be waived and accumulated if the firm is not able to pay them; iv) by promising a higher fixed income stream, in exchange for the limited upside potential, they send a stronger expression of confidence in firm's future to the market; v) compared to straight equity, they reduce the negative signaling effect and the resulting dilution of old shareholders wealth, and vi) some specific mandatory convertible securities' payoff structures can be tax deductible.

From the demand standpoint, investors generally seek for high dividend yields, downside protection, capital appreciation, or some combination of these.

[2] This is a property of convertibles in general and was first noted by Brennan and Schwartz (1988).

The reasons that justify the demand for mandatory convertibles are, among others, the following: i) compared with the underlying stocks, and even in declining interest rates and dividend yields environments, mandatory convertibles provide a high coupon, in exchange for limited upside potential and having to mandatorily convert into the underlying at a premium price, ii) investors are more protected in case of bankruptcy before the conversion date since mandatory convertibles have higher level of subordination compared to the underlying, iii) as mentioned above, compared with conventional equity or debt, mandatory convertibles are less sensitive to changes in issuer's risk after the offer, which makes these securities useful tools to reduce information asymmetry between management and investors, and iv) mandatory convertibles provide both a fixed income stream and a capital appreciation, which can result in a greater after-tax return for taxable investors as compared with other fixed income securities. Some other specific advantages of mandatory convertibles sub-types, compared with conventional equity or debt, are presented in the respective sections below.

On the issuers' side, firms naturally seek to offer less of some or all the features investors wish. The role of the investment banks is therefore to design securities that falls into the set of attributes that satisfies both the issuers and the investors at any given point in time. This matching would then increase the popularity of such securities which would attract market-makers that would provide more liquidity and narrower bid-ask spreads.

I describe the most relevant groups of mandatory convertibles in detail, below:

Limited Upside Potential

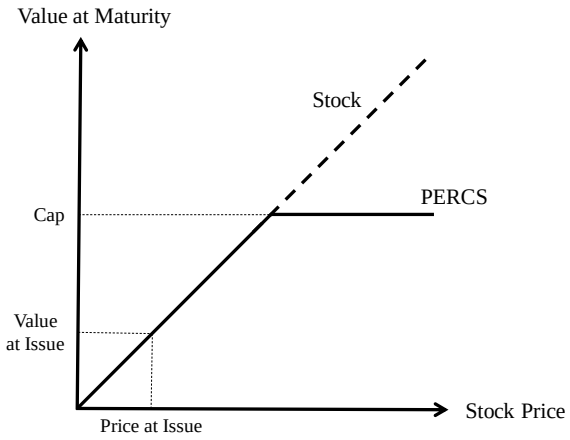
Limited upside potential mandatory convertibles typically include PERCS or PERQS (Morgan Stanley), STRYPES (Merril Lynch), TARGETS (Smith Barney) or YES (Goldman Sachs). Since the most popular form of these sub-type of mandatories are PERCS (Preferred Equity Redemption Cumulative Securities), these will be the focus of this section.

PERCS are dividend enhanced mandatory convertible preferred stocks, with a typical maturity of three years. Its dividends are cumulative, higher than those of the underlying stock and investors in this instruments receive priority over common stocks in case of bankruptcy before maturity, or until the issuer redeems them by exercising his call option and forcing the conversion before maturity.

Since at issue this securities' call has a strike price around 20-25% above the underlying stocks, if the issuer exercise his option and calls the conversion, investors gains are capped at the strike price. If not, upon conversion investors receive a variable fraction of the underlying, typically depending on its price at the time. In this sense, PERCS investors receive a higher dividend yield, as compared to common shareholders, at the price of fully participating in the downside losses while having limited upside participation. Although less common, investors can be allowed to call the conversion after some point in time and before the maturity.

In terms of valuation, PERCS are made of three components: i) a dividend cash-flow received until maturity; ii) a ordinary share received at maturity, and iii) a call option on the underlying (issuer's common stock), written to the issuer by the holder, with a strike price equal to the cap. Figure 2 depicts the value of PERCS given the cash flow structure:

Figure 2 – Value of PERCS



PERCS issuers face a tradeoff between providing investors with a higher dividend yield or a greater cap. The lower the dividend yield relative to common stocks, the lower the cap accepted by investors. This tradeoff works within a reasonable range of values, since a too high dividend yield would result in cap so low that would transform PERCS in something more close to a subordinated note, with almost no capital gain potential.

Upside Participating

The most widespread mandatories falling within this category are DECS (Salomon Brothers), PRIDES, FELINE PRIDES, PHONES and PRIZES (Merril Lynch), ACES and TRACES

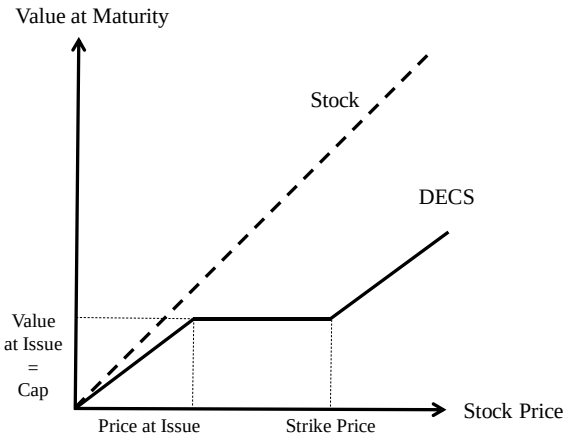
(Goldman Sachs) or PEPS (Morgan Stanley). The most popular are DECS (Dividend Enhanced Convertible Stock) and the next paragraphs will focus on analyzing its features and particularities.

Unlike PERCS, DECS do not limit capital gains in case the underlying stock appreciates, making them more suitable for bullish investors as compared to capped mandatories. In exchange, investors in these securities only start participating in the capital gains of the underlying once its price reaches a certain minimum threshold, higher than the price at the time of the offering. Additionally, the conversion ratio is variable with the maturity price, which by its turn, and similarly to Asian options, is calculated using the average of a certain number of trading days before the maturity (typically 20 days).

Finally, as PERCS, typically DECS can be early called its issuer, and less frequently by its holder, and they are typically issued at the same price of the underlying common stock. The issuer company has in this sense the flexibility of deciding on two variables, the dividend yield and the conversion ratio (including the strike price of the out-of-the-money call option on the underlying stock, that is the price threshold), the conversion ratio itself and its progression scale (normally smaller as higher is the common stocks' appreciation).

In this context, Figure 3 depicts the tradeoff between these two variables.

Figure 3 – Value of DECS



For a higher dividend yield, and between certain minimum limits, investors will accept a higher strike price and vice-versa.

Downside Protection

Some hybrid form of both sub-types was inevitable arranged by the always "altruistic" underwriting investment banks and a floor was also introduced to the DECS's framework. This is more popular in Europe rather than in the US and, regardless of this downside protection, rating agencies also consider it equity because it does not imply cash redemption.

This additional feature, which is basically a "knock-out warrant" also help firms signaling stronger confidence in the future of common stock, and therefore in their firms. Naturally, issuers of these hybrid form of mandatory convertibles will face a tradeoff between a lower cap and/or floor and a lower dividend yield or vice versa.

3. Literature Review and Hypothesis

Since the modest appearing of mandatory convertibles in 1988, their popularity has heavily increased in the following years, in special during periods of recession.

The reason that seems to justify this popularity is a twofold. On the one hand, these are generally securities that seem to help a variety of issuers to reduce costs of information asymmetry when raising capital, avoiding, among others, the lemon's problem. On the other hand, these securities include very flexible features, that accommodate the special circumstances and needs of its different issuers.

New variations of these securities every year, add increasingly flexibility, better and more creative tax treatments or simply a new way of taking advantage of market rules (e.g. recent earnings management regulations regarding dilution of EPS), but mostly, a new fancy acronym.

Whatever the reasons that justify their popularity, mandatory convertibles have had high demand, both from investors and issuers, and this alone justifies the effort of investment banks to constantly rebrand these securities with new names and, sometimes, even new features.

Despite its popularity in the market, this is still a very much fragmented academic field with few theoretical background, research, and empirical support, specifically about equity-like mandatory convertible securities.

Chemmanur et al. (2003) provides an equilibrium theoretical model to justify the choice by mandatory convertibles, among other alternatives, and a rationale for the choice of its three main

features mix (conversion ratio, cap on capital appreciation and dividend yield). This model assumes a market characterized by asymmetric information, high costs in case of financial distress and other capital raising alternatives such as straight equity, straight debt and ordinary convertibles. The model foresees that, in equilibrium, firms are more likely to choose straight debt or ordinary convertibles if the level of information asymmetry is large and the probability of default is low, and are more likely to choose mandatory convertibles if levels of information asymmetry is lower and probability of financial distress is higher. Since none of the conclusions were empirically supported, I attempt to test some of the conclusions in this work.

Arzac (1997) and Ramirez (2011) presents a theoretical description of PERCS, DECS and other mandatory convertibles, in which they explore valuation techniques and propose some explanations to justify the choice of these hybrid securities as a mean to raise capital.

Arzac (1997) focus more on providing an historical contextualization, a description of the several types of mandatory convertibles, and the characteristics of its issuers. In his work, Arzac (1997) claims that firms issuing mandatory convertibles do so because these securities help them reduce the costs of information asymmetry and the dilution associated with equity issuances, and the typical firm issuing mandatory convertibles is highly levered, with high default risk and financial distress costs.

On the other hand, Ramirez (2011) emphasized more the different equity-like and debt-like characteristics, that distinguishes the several derivatives, mandatory convertibles and other alternatives. Namely the author mentions how the conversion probability and the payment of a principal influence the equity or debt behavior in terms of fiscal treatment and, sometimes more importantly, the rating agencies treatment (please refer to Figure 1). The author continues by describing the conversion mechanisms of several real life examples.

Regarding Arzac (1997) and Ramirez (2011) works, because these explanations were not empirically supported, I will challenge some of them across this work.

Despite the scarce and, in general, outdated research on mandatory convertibles, there are significant research about preferred stock issuance, the choice between convertible debt and convertible preferred stock and more generally, about the choice between debt and equity.

Lewis and Verwijmeren (2011) examines how firms choose fixed income claims, the method of payment and, occasionally, addressees equity-like mandatory convertibles specific features by

comparing its features with other securities'. The authors show that the choice of fixed income claims is mostly driven by concerns regarding corporate taxes, refinancing costs and agency costs while the method of payment choice depends mostly on reported earnings per share strategies. Finally, they show that highly levered firms, needing extra debt capacity, usually include mandatory conversion features.

While Lewis and Verwijmeren (2011) base their analyses on comparing offers of several different types of securities, every time I challenge some of their hypotheses, I compare my sample with industry averages instead. I believe this technique presents a more unbiased analysis and would prove itself consistent every time the derived conclusions of both works points in the same direction.

Similarly, Lee and Figlewicz (2000) study the characteristics of firms that issue convertible debt versus firms that issue convertible preferred stock. The authors' findings are in line with, financial distress, tax benefits, agency and optimal structure theories. Additionally, they show that the two types of convertibles are issued by different groups of firms. The authors continue by arguing that firms with larger non-debt tax shields and higher levels of financial, operating and default risks are more likely to choose convertible preferred stocks. On the other hand, firms with greater free cash flows and growth potential, compared with the first group, are more likely to choose convertible debt.

More generally, I test my sample for other economic theories, such as financial distress and asymmetric information problems (Stein, 1992), financial structure and signaling techniques (Ross, 1977), tax advantages of issuing debt (Modigliani & Miller, 1958) and agency costs between stockholders and bondholders (Jensen & Meckling, 1976).

The inclusion of a mandatory conversion feature hugely impacts the conclusions derived from a decision-making and investment standpoint. Nevertheless, when appropriate and with the necessary adjustments, I test in this work the findings of the previously mentioned studies.

Next I present the hypothesis I will test later in this work.

3.1 Tax Benefits Hypothesis

Equity-like mandatory convertibles, usually under the form of mandatory convertible preferred stocks, are considered equity for tax purposes and its dividend payments are not tax deductible.

Since interest payments generate tax shields, issuers that can benefit from these should, in general, prefer debt-like securities since they are a less expensive way to raise capital as compared to equity-like alternatives. Conversely, firms that are not able to take advantage of tax shields from additional interest obligations should prefer equity-like mandatory convertibles.

Lee and Figlewicz (2000) show that firms with lower levels of profits and/or firms that have lower marginal tax rates, are less able to take advantage of direct tax benefits from additional interest obligations, therefore they should find equity-like mandatory convertibles a less expensive way to raise capital.

Furthermore, DeAngelo and Masulis (1980) argue that non-debt tax shields, such as depreciations and tax loss carryforwards, can make tax shields from additional interest obligations redundant. Similarly, Auerbach and Poterba (1987) argue that firms with high levels of non-debt tax shields are likely to be in a "tax exhaustion state" and therefore face a close to zero marginal tax rate on additional interest obligations.

In summary, and as pointed out by Lee and Figlewicz (2000), larger depreciations should imply lower average and marginal tax rates, which *ceteris paribus*, should also mean that firms with high levels of depreciations and/or tax loss carryforwards should find mandatory convertibles a less expensive way of raising capital.

To test this hypothesis, I use EBITDA Margin to measure the initial income positions while avoiding potential scale effects, Depreciations standardized by the level of revenues, to measure the level of non-debt tax shields and the Effective Corporate Tax Rate, to measure the level of taxation. The variables used are measured with data for the fiscal year preceding the offer.

I expect that firms issuing mandatory convertibles will have lower EBITDA margins, higher depreciations, and lower effective corporate tax rates, when compared to its industry peers.

3.2 Financial Distress Hypothesis

The financial distress hypothesis claims that firms with higher financial distress costs will prefer to raise capital through the alternative that bears the lowest probability of default. Although underwriting costs associated with debt financing are often lower than equity issues, these financially troubled firms have generally weak credit profiles and/or debt covenants, which makes refinancing at market rates an unlikely alternative given their already tough financial constraints.

As previously mentioned, equity-like mandatory convertibles become an attractive option because these securities do not require the repayment of a principal. Moreover, they have a positive impact in the financial leverage and in the credit profile of its issuer because they create additional debt capacity, and provide highly flexible features that can better suit the specific needs of its issuer.

Hereof, when compared to its industry peers, overall I expect to observe that the firms in my sample have higher bankruptcy risks, lower levels of internal funds, liquidity, solvency, and financial stability that is, higher indebtedness and financial leverage and lower interest coverage.

To test for bankruptcy risk I follow Altman (1968) methodology and use his Z-Score indicator for the 3 years preceding the offer. As for the levels of internal funds, I use Excess Cash Margin, for the 3 years preceding the offer, calculated as the ratio of operating cash flow minus operating income to revenues. Finally, to test for liquidity and solvency levels, I use a plurality of variables, using information of the 3 years preceding the offer, and aiming to find consistent conclusions both for the short and long-term. The selected variables for the short-term liquidity are the Current Ratio and the Quick Ratio and for the long-term solvency, the EBIT Interest Coverage ratio, Net Debt to EBITDA and the Debt Service Coverage Ratio. Lastly, to test for the financial stability, and overall capital structure, I use Debt to Equity, Debt to Assets and Debt to Enterprise Value.

To the extent of the tests described above, more important than the absolute values of each variable and their deviation to the industry peers' averages, are the trends observed during the period preceding the offer. By observing a worsening of the financial status, one can conclude that equity-like mandatory convertibles might have become a valid option for these firms given their increased financial distress costs whereas they were not considered a suitable option to raise capital before. This can also mean that mandatory convertibles are a solution of last resort for firms that exhausted every other solution to raise capital and are struggling to survive.

3.3 Static Trade Off Theory

Complementarily to the financial distress hypothesis, the static trade off theory suggests that whenever firms have too much debt and non-valuable tax shields, additional leverage increases can reduce firm value.

MacKIE-MASON (1990) shows that firms with high probability of bankruptcy prefer equity issues rather than debt because the higher costs of financial distress exceed the tax benefits of additional debt.

As a complementary test to this theory, I isolate some of the variables used to test previous hypothesis, namely: Depreciations, Effective Corporate Tax Rates, Altman's Z-Score, EBIT Interest Coverage and Debt to Equity Ratio.

I expect to observe that my sample of issuers includes companies with higher levels of depreciations and/or lower tax rates, which would show that they have limited capacity to benefit from tax advantages from additional debt. Lower Z-Scores and Interest Coverage Ratios and higher Debt to Equity Ratios, would show high levels of financial distress costs.

Finally, Huckins (1999) suggests that market response to equity issuances should be most positive for firms with high levels of indebtedness and overall financial risk. I test this by comparing the buy-and-hold 52 Week Abnormal Returns of issuers common stocks, in the period following the offer, to issuers' Altman's Z-Score, EBIT Interest Coverage and Debt to Equity Ratios of the period preceding the offer. I would expect to find a negative correlation between these two variables.

3.4 Optimal Capital Structure Hypothesis

Research shows that managers tend to make decisions based on industry target benchmarks. Specifically, the optimal capital structure theory suggests that managers tend to pursue target indebtedness ratios, comparing their firms with its respective industry averages.

Billingsley et al. (1994) show evidence that cross-sectional differences in capital structure are justified by industry averages. Thus, in an effort to converge to industry target levels, I would expect that firms with higher leverage ratios, as compared to its industry peers, are more likely to issue equity than debt.

I test my sample for this hypothesis, by comparing the deviations of my sample firms Debt to Equity Ratios to its industry peers, in the one year following the offer to the same variable in the three years preceding the offer.

3.5 Staged-Investment Hypothesis

Mayers (1998) shows that firms with sequential financing needs are more likely to issue convertible debt. The author argues that matching the maturity of such convertibles with the time when the firm needs a new round of financing lowers the financing costs and create extra debt capacity at the time the firm most needs.

Equity-like mandatory convertible securities would suit even better these firms with sequential financing needs, because with those, firms would have more predictability over financial distress costs, which could be triggered by an early conversion with cash redemption.

Following Mayers' argument, and as pointed out in Lewis and Verwijmeren (2011) work, unlike convertible debt, with equity-like mandatory convertible securities the timing of conversion to equity is certain, as is the non-repayment of principal. Therefore, the extra debt capacity created by mandatory convertibles is certain, unlike in any other type of non-mandatory convertibles.

Following the methodology of Lewis and Verwijmeren (2011), I would expect that firms with large future investment requirements anticipate their need of new financing through the use of equity-like mandatory convertibles.

Since future investment is not observable, I use Capital Expenditures in the year preceding the offer as a proxy for future investment, and would expect to find higher levels of this variable for my sample of issuers as compared with its industry peers.

3.6 Cash-Flow Shortage Theory

Earlier I hypothesized that highly leveraged companies are more likely to choose equity over debt when raising capital and that financially trouble firms would prefer mandatory convertibles due to its lower risk of default.

However, and as pointed out by Huckins (1999) in his work on mandatory convertibles, Ross (1977) shows that debt levels and firm values are positively correlated because they are signaling the market that they will be able to comply with their debt commitments.

Conversely, Miller and Rock (1985) show that external capital raising generally have a negative signaling effect on the market since they anticipate cash flow shortages.

This hypothesis implies that equity-like mandatory convertibles would be bad news, but since they have often attached a high dividend yield, the negative signaling effect should be neutralized by this form of market signaling that the firm as the capacity of fulfill this level of fixed payment.

To test the signaling effect of issuing mandatory convertibles, I look to the 52 week stock abnormal returns in the post offer period, the offer's dividend yield and the operating cash flows (standardized by revenues level) in the three years preceding the offer and in the year of the offer.

I expect to observe a decline in operating cash flows before the offer, which would cause the need to raise capital, and positive correlation between the offered dividend yield and post-announcement stock abnormal returns.

3.7 Pecking Order Theory

Akerlof (1995) and Myers and Majluf (1984) argue that, in the peaking order model, a new equity issue is discounted by the market as a "lemon" because the market believes management has privileged information and the stock price should be peaking.

Arzac (1997) goes further and argues that mandatory convertibles help to reduce costs of information asymmetry, that often makes equity issues more expensive for firms with little additional debt capacity, or financially troubled. Arzac (1997) continues by arguing that these securities also enable firms with growth or recovery prospects to signal their confidence to the market, avoiding this way the equity as a "lemon" problem.

In a world with information asymmetry, firms in need of external funds and aiming to maximize shareholder's value, would anticipate market's response, and prefer its safest alternative available to raise capital, with straight equity being the riskiest. As equity-like mandatory convertibles are safer than common equity, they should rank before common equity, and therefore should not be as much discounted as the latter.

I hypothesize that, the market response in the post-offer period should be most positive when issuer's common equity is underpriced before the offering, showing that equity-like mandatory convertibles attenuates the lemon's problem.

To test this, I compare abnormal returns up to three years before the offer with abnormal returns up to one year after the offering.

4. Data and Methodologies

This section presents the sample selection methodology as well a sample summary statistics

4.1 Sample Selection

Table 1 – Data Filters Summary

Data filters applied to issues of convertible securities collected from SDC Platinum. Filters include the match with information retrieved from Thomson Reuters Database (Eikon and Datastream), Compustat and SEC. Number of Events refers to the number of issuances remaining after the application of each filter

Filter Phase	Number of Events	Filters Description
1	2664	Total number of convertible issues retrieved from SDC Platinum Database between 2005 and 2015
2	2593	Currency: Issues in US Dollars
3	1594	Non-financial Industries: Issuers with 2-digit SIC other than 52, 53, 55 or BC
4	69	Mandatory Conversion: Issues with mandatory conversion flag (SDC Platinum)
5	42	Data Availability: Events with Thomson Reuters and Compustat match
6	31	Manual Filter: SEC fillings manual review

The convertible issues were retrieved from SDC Platinum Database for the years 2005 through 2015 and made by firms based in the United States of America. Table 1 shows that, in this first stage, I obtain 2664 events from SDC Platinum database for a total of around $785 billion.

I then impose a number of data filters. The first filter reduces my sample to 2593 offers and requires all issues to be made in US Dollars, which is in accordance with the preliminary filter imposed directly in SDC Platinum database of only USA issuers.

Secondly, I exclude issues made by firms belonging to the financial and real estate industries, by filtering the 2-digit SIC codes I intend to exclude (52, 53, 55 and BC). This is because convertibles issued by financial firms are mostly synthetic products and REITS are essentially tax-exempt firms with several restrictions on dividends payouts, which would severely bias the test of my hypotheses. This filter reduces my sample to 1594 offers.

The third filter imposes a “mandatory conversion” flag, one of the data fields exported from SDC Platinum database. This filter leaves me with 69 remaining offers.

The fourth filter I apply imposes the existence of financial data for the three years preceding the offer and also for the 52 weeks after the offer, both for the issuing firms and the correspondent deals. This filter is accomplished through the match of the remaining events, and its issuers, with data from Thomson Reuters (Eikon and Datastream) and Compustat databases. This reduces my sample to 42 events.

Finally, I manually screened the 42 SEC filings corresponding to the offers remaining and cross-checked the previous applicable filters once more. This final filter reduces my sample to 31 events totaling around $18 billion. Its summary statistics can be found in Table 3.

In order to have data I could compare my sample to, I then collected additional data for my sample issuers' industries from Thomson Reuters (Eikon and Datastrem) and Compustat databases. This financial data was screened by values in US Dollars and exported only for firms based in the United States of America.

This data was further grouped by SIC code and each financial variable's average matched with my final sample firms, for the period under analysis. The industry correspondence is presented in Table 2

Table 2 – Industry SIC Codes Correspondence

Industry	2-digit SIC Code	# Events	# Issuing Firms
Energy	21	5	5
Utilities	22	10	8
Construction	23	3	1
Manufacturing	31 32	3	3
Retail Trade	44 48	4	3
Telecommunication	51	2	2
Technology	54	1	1
Healthcare	62	3	3
Total		**31**	**26**

4.2 Summary Statistics

In this section I present the most relevant summary statistics for my sample of 31 equity-like mandatory convertible securities' offers.

Table 3 presents final sample's summary statistics, Figure 4 plots the evolution, in terms of value, of the mandatory convertible securities issuances in the US market across the period under analysis (2005-2015) and finally, Figure 5 adds an additional layer of detail to Figure 4, by including industry disaggregation for both absolute and relative values.

Issuers' Characteristics

Table 3 presents the 26 firms that issued a total of 31 mandatory convertible securities in the US market between 2005 and 2015. These issuances sum up to c$18 billion and are made of 18 PERCS,

12 PRIDES and 1 DECS. Regarding the issuers, and bearing in mind that all financial firms and REITS were excluded, my final sample includes 10 offers made by 8 Utilities firms and 5 offers made by 5 Energy firms. The remaining offers were made by firms either from Construction, Manufacturing, Retail Trade, Telecommunication, Technology or Healthcare industries. More information about the disaggregation by industry of the offers can be found in Table 2 and Figure 5.

Issue size, compared with issuer's market value before the offer, range from 0.9% (Anadarko Petroleum Corp) to 70.4% (Kinder Morgan inc) and its average stood at 11.4% or an average principal of $ 569 million.

As for the dividend yields offered in these issuances, values range from 4.8% (Tyson Foods Inc) to 11.1% (Frontier Communications Group) with an average of 6.6%. If compared with common stock's dividend yields, these are clearly inferior, with values ranging from 0% to 8.5%, an average of 1.8% and a median even lower of 0.9%.

In terms of credit profile, Altman's Z-Scores depicts generally troubled firms, with values ranging from -0.2 (Tenet HealthCare Corp) to 7.1 (Stericycle Inc) and an average of 1.8, which is exactly the breakpoint of the distress zone in terms of bankruptcy probability.

Finally, in terms of use of proceeds, the biggest slice of my sample (19 firms) claimed they intend to use the proceeds for general purposes, which is usually perceived as investments in firm's liquidity (working capital, reduce short-term debt, capex, etc.), 6 firms showed intention of using the proceeds to finance acquisitions, 5 firms to reduce indebtedness and one firm to finance an investment opportunity.

Table 3 – Sample Summary Statistics

Final sample summary statistics. The events presented were primarily collected from SDC Platinum database and later supported with data from Thomson Reuters database (EIKON and Datastream) and Compustat. Finally, all the applicable variables were cross-checked through the corresponding SEC filings and the adjusted accordingly.

Issuer	Primary NAIC Industry Code	Industry	Security [a]	Issue Year	Principal Amount ($ million)	Issue Size (%) [b]	Offer Yield (%)	Common Dividend Yield (%)	Z-Score [c]	Use of Proceeds
AmSurg Corp	62	Healthcare	PERCS	2014	150	10.1	5.3	0.0	3.4	Acquisition
Anadarko Petroleum Corp	21	Energy	PRIDES	2015	400	0.9	7.5	1.2	2.5	Gen. Purpose
Beazer Homes USA Inc	23	Construction	DECS	2010	50	5.5	7.5	0.0	2.0	Gen. Purpose
Beazer Homes USA Inc	23	Construction	PRIDES	2010	75	5.5	7.3	0.0	2.0	Gen. Purpose
Beazer Homes USA Inc	23	Construction	PRIDES	2012	100	7.8	7.5	0.0	1.8	Gen. Purpose
Bristow Group Inc	48	Retail Trade	PERCS	2006	200	24.6	5.5	7.2	4.4	Gen. Purpose
Chesapeake Energy Corp	21	Energy	PERCS	2006	500	4.8	6.3	1.9	2.1	Gen. Purpose
Cliffs Natural Resources Inc	21	Energy	PERCS	2013	675	13.0	7.0	0.0	1.9	Gen. Purpose
Dominion Resources Inc	22	Utilities	PRIDES	2014	900	2.2	6.4	3.5	1.8	Gen. Purpose
Dynegy Inc	22	Utilities	PERCS	2014	400	12.7	5.4	0.0	1.2	Gen. Purpose
Exelon Corp	22	Utilities	PRIDES	2014	1,150	3.8	6.5	3.8	1.4	Gen. Purpose
Frontier Communications Corp	51	Telecommunication	PERCS	2015	1,750	34.3	11.1	8.5	0.8	Acquisition
Goodyear Tire & Rubber Co	32	Manufacturing	PERCS	2011	435	12.2	5.9	0.9	1.8	Reduce Debt
Huntsman Corp	32	Manufacturing	PERCS	2005	250	7.4	5.0	3.7	1.3	Gen. Purpose
Kinder Morgan Inc	48	Retail Trade	PERCS	2015	1,568	70.4	9.8	2.2	2.0	Reduce Debt
Kindred Healthcare Inc	62	Healthcare	PRIDES	2014	150	11.7	7.5	4.3	1.2	Reduce Debt
NextEra Energy Inc	22	Utilities	PRIDES	2010	345	1.5	7.0	2.5	1.3	Gen. Purpose
NextEra Energy Inc	22	Utilities	PRIDES	2012	600	2.2	5.6	2.5	1.4	Gen. Purpose
NextEra Energy Inc	22	Utilities	PRIDES	2015	700	1.6	6.4	2.5	1.6	Proj. Finance
NRG Energy Inc	22	Utilities	PERCS	2006	500	12.7	5.8	3.1	1.8	Acquisition
PNM Resources Inc	22	Utilities	PRIDES	2005	215	13.3	6.8	2.7	1.5	Gen. Purpose
PPL Corp	22	Utilities	PRIDES	2011	850	7.5	8.8	4.0	1.7	Reduce Debt
Rite Aid Corp	44	Retail Trade	PERCS	2005	113	6.1	7.0	0.0	0.3	Gen. Purpose
Rite Aid Corp	44	Retail Trade	PERCS	2005	115	5.0	5.5	0.0	0.3	Gen. Purpose
Southwestern Energy Co	21	Energy	PERCS	2015	1,500	17.1	6.3	0.0	0.7	Reduce Debt
Stericycle Inc	22	Utilities	PERCS	2015	700	5.8	5.3	0.0	7.1	Acquisition
Tenet Healthcare Corp	62	Healthcare	PERCS	2009	300	10.7	7.0	0.0	-0.2	Gen. Purpose
T-Mobile US Inc	51	Telecommunication	PERCS	2014	870	3.8	5.5	0.0	0.3	Gen. Purpose
Tyson Foods Inc	31	Manufacturing	PRIDES	2014	1,500	11.3	4.8	0.8	5.1	Acquisition
Unisys Corp	54	Technology	PERCS	2011	225	14.1	6.3	0.0	1.1	Gen. Purpose
WPX Energy Inc	21	Energy	PERCS	2015	350	15.4	6.3	0.0	1.1	Acquisition

[a] "PERCS" stands for Preference Equity Redemption Cumulative Stock, "PRIDES" for Preferred Redeemable Increased Dividend Equity Security and "DECS" for Dividend Enhanced Convertible Stock.

[b] "Issue Size" equals issue's principal amount divided by market value of issuer before the offer.

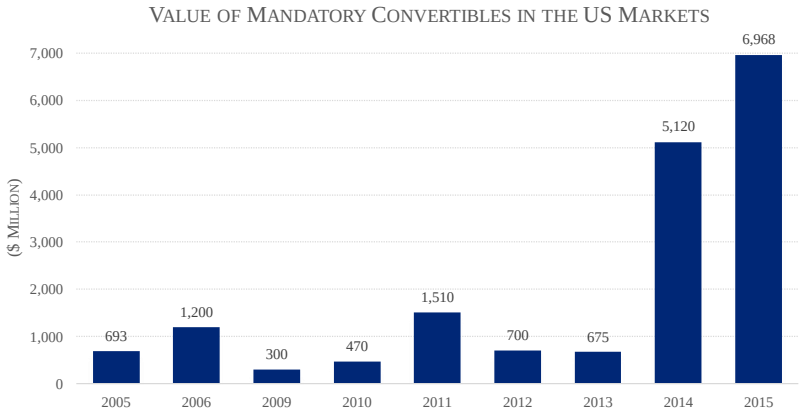
[c] Z-Score refers to the Altman Z-Score of the last 12 months preceding the offer. The base sample utilized for the calculation of such indicator considers a division of manufacturing and non-manufacturing firms. Generally, firms with a score above 3.0 have a low probability of bankruptcy, and those with a Z-Score of less than 1.8 have a relatively high probability of bankruptcy.

Trends in the issuance of mandatory convertible securities

Although my sample is considerably larger than those obtained in previous studies (typically less than half the number of events of my sample), which can be a good predictor of the increase of popularity among these hybrid instruments, my sample and period of analysis is still rather small to enable the inference of valid industry wide conclusions.

In this sense, I present below a brief analysis of some of the most flagrant industry trends during this period which, given its statistical validity, the reader should interpret with caution and not necessarily as universally transposable to other time periods or markets.

Figure 4 – Value of Mandatory Convertibles in the US Market (2005-2015)



As presented by Figure 4, the total value of mandatory convertible offers in the US market increased significantly in the last 2 years of my period of analysis, adding to around 69% of total sample issuances. Moreover, the same metric was rather small in the 2 years immediately after the beginning of the 2008 crisis, totaling only 4%.

The evolution of values does not seem indicative of a gain in popularity across the period since there are no defined positive trend. Nevertheless, conclusions can be biased by the financial crisis of 2008.

Figure 5 – Value of Mandatory Convertibles in the US Market per Industry (2005-2015)

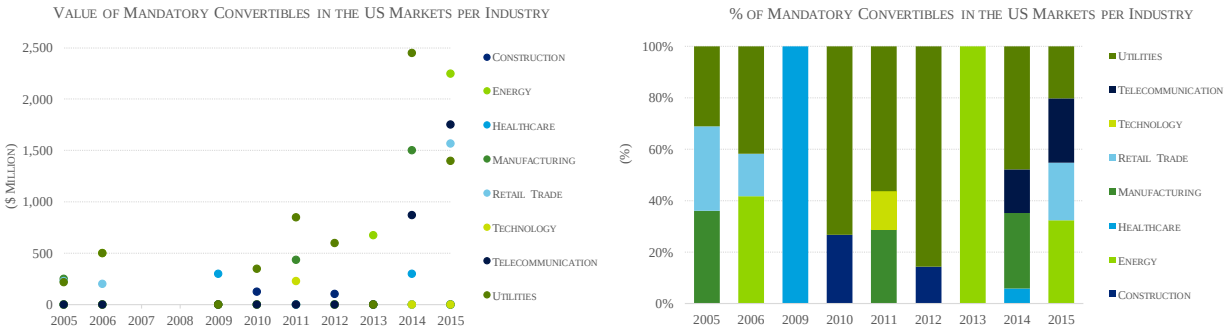


Figure 5 shows that, in addition to being the most representative industry in the mandatory convertibles market during the period under analysis, both in absolute and relative values, the Utilities industry is also one of the most frequent participant in this market with issuances of

mandatories in 7 of the 10 years analyzed. In contrast, the least participant industries are Construction ($ 225 million) and Technology ($ 225 million).

It seems clear the existence of a structural break around 2007/2008, years in which there was no issuance of mandatories. Moreover, it is visible the increased participation of more and different industries from this point in time onwards, with also more and larger issuances.

5. Discussion of Results

In this section I examine the results of the tests performed on the hypotheses presented in section 5. The hypotheses tested are sorted as following: 5.1) Tax Benefits Hypothesis; 5.2) Financial Distress Hypothesis; 5.3) Static Trade Off Theory; 5.4) Optimal Capital Structure Hypothesis; 5.5) Staged-Investment Hypothesis; 5.6) Cash-Flow Shortage Theory, and 5.7) Pecking Order Theory

5.1 Tax Benefits Hypothesis

Larger depreciations should imply lower average and marginal tax rates, which *ceteris paribus*, should also mean that firms with high levels of depreciations and/or tax loss carryforwards should find mandatory convertibles a less expensive way of raising capital.

Table 4 – Tax Benefits Hypothesis

Deviations of sample firms averages from its industry averages using data relative to the end of the fiscal year preceding the issuance of equity-like mandatory convertible securities by the sample firms. EBITDA Margins are computed using EBITDA and Total Revenues provided by Thomson Reuters. Depreciations are Depreciation Expenses standardized by Total Revenues provided by Thomson Reuters. Tax Rates are Effective Tax Rates provided by SDC Platinum and Thomson Reuters. All deviations are calculated over arithmetic averages and blank values are not considered as an occurrence. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

Industry	N	EBITDA Margin	Depreciations	Tax Rate
Construction	3	-22.4 p.p.***	0.4 p.p. ***	-27.0 p.p. *
Energy	5	17.8 p.p.***	5.8 p.p. **	-4.6 p.p. ***
Healthcare	3	-9.6 p.p.***	-0.1 p.p. **	-28.5 p.p. **
Manufacturing	3	-7.4 p.p.*	-0.9 p.p. *	-25.3 p.p. ***
Retail Trade	4	15.5 p.p.***	4.5 p.p. **	-17.7 p.p. ***
Technology	1	-2.8 p.p.	1.0 p.p. *	-21.4 p.p. ***
Telecommunications	2	-6.6 p.p.**	6.4 p.p. **	-0.3 p.p. **
Utilities	10	2.7 p.p.****	8.9 p.p. **	29.4 p.p. ***

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

The results for the EBITDA Margins are mixed and seems to suggests influence by industry specificities since deviations' magnitude is substantial.

Consistent with Auerbach and Poterba (1987), results for Depreciations seems to support the hypothesis that higher non-debt tax shields, such as depreciations, play a role in how firms raise capital. Specifically, they are more likely to choose equity-like mandatory convertible securities.

Although not shown in Table 4, data shows that deviations of sample's average depreciations from its industry peers are most positive for industries with more weight of depreciations to revenues, which brings more consistency to my previous conclusions.

Finally, Table 4 shows that firms with lower Effective Corporate Tax Rates, as compared to its industry peers, are more likely to choose mandatory convertible securities. Similarly, and as it would be expected, deviations of this variable are larger for firms with lower profit levels and higher depreciations (except for Utilities, where although our sample shows higher profitability, also shows higher depreciations compared to its industry benchmark).

Apart from the mixed results found in the profitability levels, these results are consistent with the tax benefits theory and with Lee and Figlewicz (2000) previous findings.

5.2 Financial Distress Hypothesis

The financial distress hypothesis claims that firms with higher financial distress costs will prefer to raise capital through the alternative that bears the lowest probability of default.

Bankruptcy Risk

Altman's Z-Score is a metric commonly used as a bankruptcy predictor and, however there are other important factors to take into consideration, values for this variable below 1.8 generally suggests financial distress and high likelihood of bankruptcy.

Table 5 – Bankruptcy Risk

Values for sample firms, its industry peers, and deviations of the former to the latter using data relative to the end of the three fiscal years preceding the issuance of equity-like mandatory convertible securities by the sample firms. Zscore variable refers to Altman's Z-Score provided by Thomson Reuters EIKON. Values of Zscore below 1.8 are classified "distress zone", between 1.8 and 2.99 "grey zone" and above 2.99 "safe zone". Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

		Zscore			Change	
		t-1	t-2	t-3	t-1	t-2
Construction (N=3)	Sample	2.0 ***	2.6 **	4.7 **	-0.6	-2.1
	Bench.	4.6 **	4.3 **	4.6 **	0.4	-0.4
	Dev.	**-2.7**	**-1.7**	**0.0**	**-1.0**	**-1.7**
Energy (N=5)	Sample	1.6 **	2.8 **	3.8 **	-1.1	-1.1
	Bench.	4.0 *	8.9 *	31.0 *	-4.9	-22.1
	Dev.	**-2.4**	**-6.1**	**-27.2**	**3.8**	**21.0**
Healthcare (N=3)	Sample	1.5 **	1.3 **	1.7 **	0.1	-0.4
	Bench.	-0.4	2.1 *	-0.8 *	-2.5	2.8
	Dev.	**1.9**	**-0.7**	**2.5**	**2.6**	**-3.2**
Manufacturing (N=3)	Sample	2.3	3.1	3.3	-0.8	-0.2
	Bench.	-2.8	-32.3	-33.8	29.5	1.4
	Dev.	**5.1**	**35.5**	**37.1**	**-30.4**	**-1.6**
Retail Trade (N=4)	Sample	1.8 **	2.5 **	0.9 **	-0.8	1.7
	Bench.	8.6 *	8.0 *	7.4	0.5	0.6
	Dev.	**-6.8**	**-5.5**	**-6.6**	**-1.3**	**1.1**
Technology (N=1)	Sample	0.0 ***	0.0 ***	0.1 ***	0.0	0.0
	Bench.	21.3 **	18.7 **	5.9 **	2.6	12.9
	Dev.	**-21.3**	**-18.7**	**-5.8**	**-2.6**	**-12.9**
Telecommunications (N=2)	Sample	0.2 **	0.4 **	0.4 **	-0.2	0.1
	Bench.	4.3	3.9	0.1	0.4	3.8
	Dev.	**-4.1**	**-3.5**	**0.3**	**-0.6**	**-3.7**
Utilities (N=10)	Sample	0.1 **	0.2 **	0.2 **	0.0	0.0
	Bench.	0.2 *	0.3 **	0.3 **	-0.1	0.0
	Dev.	**0.0**	**-0.1**	**-0.1**	**0.1**	**-0.1**

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

For this metric, data shows that issuing firms are either below or close to this threshold in the year preceding the offer. Furthermore, apart from the manufacturing, which presents very large relative standard errors in all years, and the healthcare industry, all other issuers are below its industry averages.

As for the change in the years preceding the offer, there is a general deterioration of this score as closer the firms are from the issue year. This indicates a worsening of its financial situation and most likely an increase of the financial distress costs. If we control these trends for benchmark firms, results become more mixed, nevertheless sample firms seem to deteriorate more than its industry peers.

These results are consistent with my hypothesis that firms with high financial distress costs prefer to raise capital using safer securities, being equity-like mandatory convertibles our benchmark security in this comparative analysis.

Financial Slack

Firms with low levels of internal funds are less likely to incur in future debt commitments due to their greater inability to satisfy the resultant debt service obligations.

In this sense, I assume that the levels of excess cash in the years preceding the offer are a good proxy for future availability of funds, in a scenario where firms did not raise any capital.

Table 6 – Financial Slack

Values for sample firms, its industry peers, and deviations of the former to the latter using data relative to the end of the three fiscal years preceding the issuance of equity-like mandatory convertible securities by the sample firms. Excess Cash Mg variable refers to the ratio of operating cash flow minus operating income to revenues and is presented in %. Input values to this variable are provided by Compustat and Thomson Reuters EIKON. Changes in Excess Cash Mg over the period under analysis are presented in percentage points. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

		Excess Cash Mg (%)			Change (p.p.)	
		t-1	t-2	t-3	t-1	t-2
Construction (N=3)	Sample	20.8 ***	50.1 **	30.0 ***	-58.5	66.8
	Bench.	71.2 *	52.8 *	57.6 *	34.9	-8.4
	Dev.	**-50.4**	**-2.7**	**-27.6**	**-93.4**	**75.2**
Energy (N=5)	Sample	34.3 ***	42.0 **	43.2 **	-18.4	-2.6
	Bench.	202.5 *	65.1 *	248.9 *	211.3	-73.9
	Dev.	**-168.2**	**-23.0**	**-205.7**	**-229.6**	**71.2**
Healthcare (N=3)	Sample	11.5 ***	12.5 ***	11.5 ***	-7.8	8.7
	Bench.	32.0 *	48.7 *	19.8 *	-34.3	146.4
	Dev.	**-20.5**	**-36.2**	**-8.3**	**26.4**	**-137.6**
Manufacturing (N=3)	Sample	4.0 ***	6.0 ***	-1.2 ***	-34.4	-588.7
	Bench.	2516.3	479.4	585.6	424.9	-18.1
	Dev.	**-2512.4**	**-473.4**	**-586.8**	**-459.3**	**-570.5**
Retail Trade (N=4)	Sample	5.3 ***	14.3 ***	24.9	-63.1	-42.3
	Bench.	2.5 **	3.2 **	3.8	-22.0	-14.3
	Dev.	**2.8**	**11.1**	**21.1**	**-41.1**	**-28.0**
Technology (N=1)	Sample	2.5 ***	4.7 ***	7.8 ***	-47.0	-39.1
	Bench.	2131.2 *	1874.3 *	588.5 *	13.7	218.5
	Dev.	**-2128.7**	**-1869.6**	**-580.7**	**-60.8**	**-257.6**
Telecommunications (N=2)	Sample	19.1 ***	42.9 **	37.6 ***	-55.5	14.0
	Bench.	431.1 *	392.4 *	12.6 *	9.9	3016.0
	Dev.	**-412.0**	**-349.5**	**25.1**	**-65.4**	**-3002.0**
Utilities (N=10)	Sample	13.9 ***	15.9 ***	20.4 ***	-12.5	-22.3
	Bench.	15.1 *	28.2 *	27.4 *	-46.3	2.9
	Dev.	**-1.3**	**-12.3**	**-7.0**	**33.8**	**-25.2**

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

Results for this variable show both a worsening of the level of internal funds, as firms approach the issue date, and a consistent negative deviation from its industry peers' internal funds.

In this regard, I find support in the data for my hypothesis since firms raising funds through securities that do not imply future cost commitments have lower levels of internal funds as compared with industry benchmarks.

Liquidity

The variables used aim to assess on firms' capacity to fulfill short-term financial obligations (within one year), being that, by analyzing both current and quick ratios, I intend to overcome potential biasedness introduced by inventories' liquidity, which could differ from industry to industry and is therefore avoided by the quick ratio (also known as acid-test ratio). These metrics also bring more consistency to my analysis of internal funds, specifically in the shorter-term.

Table 7 – Liquidity

Values for sample firms, its industry peers, and deviations of the former to the latter using data relative to the end of the three fiscal years preceding the issuance of equity-like mandatory convertible securities by the sample firms. Current Ratio variable refers to the ratio of total current assets to total current liabilities and Quick Ratio refers to the ratio of total current assets minus inventories to total current liabilities. Input values to this variable are provided by Thomson Reuters EIKON. Changes in the variables over the period under analysis are presented in absolute values. Data for construction industry is not available for these variables. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

		Current Ratio			Change		Quick Ratio			Change	
		t-1	t-2	t-3	t-1	t-2	t-1	t-2	t-3	t-1	t-2
Energy (N=5)	Sample	0.8 **	1.1 **	1.7 **	-0.3	-0.3	0.8 **	0.9 **	1.5 **	-0.1	-0.4
	Bench.	1.4 **	1.4 **	1.5 **	0.0	-0.1	2.4 **	2.5 **	2.5 **	0.0	0.0
	Dev.	**-0.6**	**-0.3**	**0.2**	**-28.2**	**-27.7**	**-1.6**	**-1.6**	**-1.1**	**-5.1**	**-40.3**
Healthcare (N=3)	Sample	1.5 **	1.4 **	1.6 **	0.1	-0.1	1.6 **	1.6 **	1.8 **	0.0	-0.1
	Bench.	1.4 **	1.4 **	1.4 **	0.0	0.0	1.8 **	2.0 **	1.8 **	-0.1	0.1
	Dev.	**0.0**	**-0.1**	**0.1**	**6.4**	**-12.9**	**-0.1**	**-0.4**	**0.0**	**13.1**	**-19.2**
Manufacturing (N=3)	Sample	1.6 **	1.8	1.7	-0.1	0.0	1.0 ***	1.2	1.0	-0.1	0.2
	Bench.	1.8 **	1.8 **	1.6 **	0.0	0.1	2.6 **	2.4 **	2.0 **	0.1	0.2
	Dev.	**-0.2**	**0.0**	**0.1**	**-11.1**	**-10.3**	**-1.6**	**-1.3**	**-1.0**	**-20.2**	**-3.4**
Retail Trade (N=4)	Sample	0.6 ***	0.7 ***	0.7	-0.1	0.0	1.2 ***	1.2 ***	0.6	0.0	0.9
	Bench.	1.5 **	1.5 **	1.5 **	0.0	0.0	1.0 **	1.0 **	1.0 **	0.0	0.0
	Dev.	**-0.9**	**-0.8**	**-0.8**	**-4.4**	**-5.8**	**0.2**	**0.2**	**-0.4**	**-1.4**	**88.6**
Technology (N=1)	Sample	1.4 ***	1.2 ***	1.1 ***	0.1	0.1	1.3 ***	1.2 ***	1.1 ***	0.2	0.1
	Bench.	1.4 **	1.5 **	1.3 **	0.0	0.1	3.1 **	3.3 **	2.7 **	-0.1	0.2
	Dev.	**0.0**	**-0.2**	**-0.2**	**19.3**	**-2.2**	**-1.7**	**-2.1**	**-1.7**	**21.7**	**-9.6**
Telecommunications (N=2)	Sample	1.9 *	1.0 **	2.0	0.8	-0.5	1.5 *	1.1 **	2.2 *	0.4	-0.5
	Bench.	1.9 **	1.8 **	1.7 **	0.0	0.1	2.6 **	2.6 **	2.4 **	0.0	0.1
	Dev.	**0.0**	**-0.8**	**0.3**	**77.8**	**-55.1**	**-1.1**	**-1.5**	**-0.2**	**35.4**	**-59.6**
Utilities (N=10)	Sample	0.9 **	0.9 **	0.8 ***	0.1	0.1	1.0 **	1.1 **	0.8 **	-0.1	0.3
	Bench.	1.0 **	1.0 **	1.0 **	0.0	0.0	1.0 **	1.0 **	1.0 **	0.0	0.0
	Dev.	**0.0**	**-0.1**	**-0.1**	**7.0**	**9.2**	**0.0**	**0.1**	**-0.2**	**-5.7**	**28.5**

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

In the year preceding the offer, although values for Current Ratio are not very clear, they are mostly in line with the benchmark for most of the industries. On the other hand, Quick Ratio deviations from the benchmark are more pronounced and negative, which supports my hypothesis.

As for the two and three years before the offer, both variables show a larger negative deviation from its industry peers, which also supports my hypothesis.

Regarding the trends of these two variables over the years preceding the offer, results are mixed for the year immediately preceding the issuance but the years before show more conclusive trends,

being them negative, which supports the hypothesis of financial deterioration as the issuers get closer to the issue date.

Overall, I conclude that results for the year immediately before the offer are fairly mixed but, the same variables for the years before that, support my hypothesis that firms choosing to raise capital through equity-like mandatory convertibles have lower levels of liquidity before the issuance in general, and experience a liquidity deterioration as closer they get to the issue date.

Solvency

To further examine firms' ability to incur in future financial costs I turn now to analyze EBIT Interest Coverage Ratios and Debt Service Coverage Ratios, which provide a more long-term picture of firms' financial cushion to support future debt service commitments.

Table 8 – Solvency

Values for sample firms, its industry peers, and deviations of the former to the latter using data relative to the end of the three fiscal years preceding the issuance of equity-like mandatory convertible securities by the sample firms. EBIT Int. Cov. Ratio refers to EBIT Interest Coverage Ratio and is computed as the ratio of EBIT to Interest Expenses. Debt Serv. Cov. Ratio refers to Debt Service Coverage Ratio and is computed as the ratio of Net Income to Total Debt Service, having that Total Debt Service includes total debt obligations due within one year, as interest, principal, sinking-fund and lease payments. Input values to these ratios are provided by Thomson Reuters EIKON and Compustat. Changes in the variables over the period under analysis are presented in absolute values. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

		EBIT Int. Cov. Ratio			Change		Debt Serv. Cov. Ratio			Change	
		t-1	t-2	t-3	t-1	t-2	t-1	t-2	t-3	t-1	t-2
Construction (N=3)	Sample	-0.1	2.9	2.3	-3.0	0.6	-24.7	-12.0	-12.3	-12.7	0.3
	Bench.	18.8 *	22.4 *	14.3 *	-3.6	8.1	-1.4 **	-4.1 *	-2.2 *	2.7	-1.9
	Dev.	**-19.0**	**-19.5**	**-12.1**	**0.6**	**-7.5**	**-23.3**	**-7.9**	**-10.1**	**-15.4**	**2.2**
Energy (N=5)	Sample	18.8	193.4	18.7	-174.6	174.6	-0.2	3.3	3.6	-3.4	-0.3
	Bench.	56.7	2.5	16.1 *	54.3	-13.6	2.8 *	2.5 **	2.4 **	0.3	0.1
	Dev.	**-38.0**	**190.9**	**2.6**	**-228.8**	**188.3**	**-3.0**	**0.8**	**1.1**	**-3.8**	**-0.4**
Healthcare (N=3)	Sample	5.0	6.8	6.1	-1.8	0.7	0.3	0.2	-1.4	0.1	1.6
	Bench.	28.2 *	53.5 *	57.1 *	-25.3	-3.6	0.8 *	0.9 *	0.8 *	-0.1	0.0
	Dev.	**-23.2**	**-46.7**	**-50.9**	**23.5**	**4.3**	**-0.5**	**-0.7**	**-2.2**	**0.2**	**1.6**
Manufacturing (N=3)	Sample	4.1	2.2	3.8	1.9	-1.6	0.2	0.1	0.5	0.0	-0.4
	Bench.	70.8 *	-86.3	63.9 *	157.1	-150.3	3.3 *	2.9 *	3.7 *	0.4	-0.8
	Dev.	**-66.6**	**88.5**	**-60.1**	**-155.2**	**148.6**	**-3.1**	**-2.7**	**-3.1**	**-0.4**	**0.4**
Retail Trade (N=4)	Sample	1.7	3.5 **	2.1	-1.9	1.4	0.7	0.9	0.1	-0.3	0.8
	Bench.	96.9 *	63.5 *	38.9 *	33.4	24.5	1.9 **	1.9 **	1.6 **	0.1	0.2
	Dev.	**-95.2**	**-60.0**	**-36.9**	**-35.2**	**-23.1**	**-1.3**	**-0.9**	**-1.5**	**-0.3**	**0.6**
Technology (N=1)	Sample	3.7 ***	3.5 ***	0.0 ***	0.2	3.4	1.2 ***	1.4 ***	-0.7 ***	-0.2	2.1
	Bench.	-14.7	-1.8	1.7	-12.9	-3.4	2.3 *	1.7 *	0.3 *	0.6	1.4
	Dev.	**18.4**	**5.2**	**-1.6**	**13.1**	**6.9**	**-1.1**	**-0.3**	**-1.0**	**-0.8**	**0.7**
Telecommunications (N=2)	Sample	1.2 **	2.1 *	2.5 *	-0.9	-0.4	0.1	-4.4	-2.7	4.4	-1.6
	Bench.	-33.7	-14.0 *	13.2 *	-19.7	-27.2	2.1 **	2.2 **	1.7 **	-0.1	0.5
	Dev.	**34.9**	**16.1**	**-10.8**	**18.8**	**26.9**	**-2.0**	**-6.5**	**-4.4**	**4.5**	**-2.1**
Utilities (N=10)	Sample	4.4	4.0	4.2	0.4	-0.2	0.5	0.4	0.5	0.1	-0.1
	Bench.	5.2 **	4.3 **	4.3 **	0.9	-0.1	0.4 **	0.4 **	0.5 **	0.0	-0.1
	Dev.	**-0.8**	**-0.3**	**-0.1**	**-0.5**	**-0.1**	**0.0**	**-0.1**	**0.0**	**0.1**	**-0.1**

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

Results show large relative standard errors for both variables, especially in the sample of issuers.

For the EBIT Interest Coverage Ratio, in the year preceding the offer I observe large deviations from benchmark for most of the industries, being some negative, which supports my hypothesis, and two other industry showing very positive deviations (i.e. Technology and Telecommunications). Similar conclusions can be drawn from how issuers' EBIT Interest Coverage Ratios evolved in the three years preceding the offer, mostly if we compare with industry evolutions.

As for the Debt Service Interest Coverage Ratios, despite the still very large relative standard errors in my sample of issuers, I find more consistent data, with all issuers' ratios below its industry peers' average in the year preceding the offer. As for the evolution of these ratios in the three years preceding the offer, apart from the Telecommunications industry, most of other industries show negative evolutions compared to its industry averages.

These results support the hypothesis that firms issuing mandatory convertible securities to raise external funds have lower levels of solvency as these type of securities place fewer financial constraints on the issuers that has already high financial distress costs.

It should also be mentioned that these results raise a potential industry interference that is not being covered in this study.

Financial Stability

Lee and Figlewicz (2000) argue that firms issuing mandatory convertible securities have greater levels of indebtedness.

Table 9 – Financial Stability

Values for sample firms, its industry peers, and deviations of the former to the latter using data relative to the end of the three fiscal years preceding the issuance of equity-like mandatory convertible securities by the sample firms. Debt to Equity refers to Debt to Equity Ratio, Debt to Assets refers to Debt to Assets Ratio and Debt to Enterprise Value refers to Debt to Enterprise Value Ratio. Input values to these ratios are provided by Thomson Reuters EIKON and Compustat. Changes in the variables over the period under analysis are presented in absolute values. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

		Debt to Equity			Change		Debt to Assets			Change		Debt to Enterprise Value			Change	
		t-1	t-2	t-3	t-1	t-2	t-1	t-2	t-3	t-1	t-2	t-1	t-2	t-3	t-1	t-2
Construction (N=3)	Sample	7.6 ***	4.1 *	1.8	3.5	2.3	0.7	0.7	0.5	0.1	0.1	1.2 ***	1.3 **	1.0 **	-0.1	0.3
	Bench.	0.8 *	0.9 **	0.7 **	0.0	0.1	0.3 **	0.3 **	0.3 **	0.0	0.0	0.4 **	0.4 **	0.3 **	0.0	0.0
	Dev.	**6.8**	**3.2**	**1.1**	**3.5**	**2.1**	**0.4**	**0.3**	**0.2**	**0.1**	**0.1**	**0.8**	**0.9**	**0.7**	**-0.1**	**0.2**
Energy (N=5)	Sample	0.9 **	0.6 **	0.6 ***	0.2	0.1	0.3	0.3	0.2	0.0	0.0	0.3 ***	0.3 ***	0.2 ***	0.0	0.0
	Bench.	0.6 **	0.5 *	0.5 **	0.1	0.0	0.3 **	0.2 **	0.2 **	0.0	0.0	0.2 **	0.2 **	0.2 **	0.0	0.0
	Dev.	**0.3**	**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**
Healthcare (N=3)	Sample	3.6	3.5	3.1	0.0	0.4	0.5	0.5	0.5	0.0	0.0	0.6 **	0.6 **	0.6 **	0.0	0.0
	Bench.	3.8 *	3.8 *	3.9 **	0.0	-0.1	0.6 **	0.6 **	0.6 **	0.0	0.0	0.3 **	0.3 **	0.3 **	0.0	0.0
	Dev.	**-0.2**	**-0.3**	**-0.7**	**0.1**	**0.5**	**-0.1**	**-0.1**	**-0.1**	**0.0**	**0.0**	**0.3**	**0.3**	**0.3**	**0.0**	**0.0**
Manufacturing (N=3)	Sample	13.2	6.1	4.9	7.0	1.3	0.4	0.3	0.3	0.1	0.0	0.4 **	0.8	0.9	-0.4	-0.1
	Bench.	0.4 **	0.4 *	0.5 **	0.0	-0.1	0.2 **	0.2 **	0.2 **	0.0	0.0	0.2 **	0.2 **	0.4 **	0.0	-0.1
	Dev.	**12.8**	**5.7**	**4.4**	**7.1**	**1.3**	**0.3**	**0.1**	**0.1**	**0.1**	**0.0**	**0.2**	**0.5**	**0.5**	**-0.4**	**0.0**
Retail Trade (N=4)	Sample	1.2 ***	2.7 **	2.5	-1.4	0.2	0.5	0.5	0.5	0.0	0.0	0.3 ***	0.4 ***	0.4	-0.1	-0.1
	Bench.	0.6 **	0.6 **	0.8 *	0.1	-0.2	0.3 **	0.2 **	0.3 **	0.0	0.0	0.2 **	0.2 **	0.1 **	0.0	0.0
	Dev.	**0.6**	**2.1**	**1.7**	**-1.5**	**0.4**	**0.3**	**0.2**	**0.2**	**0.0**	**0.0**	**0.1**	**0.2**	**0.3**	**-0.1**	**-0.1**
Technology (N=1)	Sample	-0.9 ***	-0.7 ***	-0.7 ***	-0.2	0.0	0.3 ***	0.3 ***	0.4 ***	0.0	-0.1	0.7 ***	0.4 ***	1.2 ***	0.2	-0.8
	Bench.	0.6 **	0.6 **	0.9 **	0.0	-0.3	0.2 *	0.2 *	0.3 *	0.0	0.0	0.1 **	0.1 **	0.2 **	0.0	0.0
	Dev.	**-1.5**	**-1.3**	**-1.6**	**-0.1**	**0.3**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.6**	**0.3**	**1.0**	**0.3**	**-0.7**
Telecommunications (N=2)	Sample	1.8 *	2.4 **	1.9 **	-0.6	0.4	0.5	0.5	0.5	0.0	0.0	0.5 ***	0.7 ***	0.8 ***	-0.2	0.0
	Bench.	0.9 *	0.8 *	0.8 *	0.1	0.0	0.3 **	0.3 **	0.3 **	0.0	0.0	0.2 **	0.3 **	0.3 **	0.0	0.0
	Dev.	**1.0**	**1.6**	**1.2**	**-0.6**	**0.4**	**0.2**	**0.2**	**0.2**	**0.0**	**0.0**	**0.3**	**0.5**	**0.5**	**-0.2**	**0.0**
Utilities (N=10)	Sample	1.4 **	1.4 **	1.4	0.0	-0.1	0.4	0.4	0.4	0.0	0.0	0.4 ***	0.4 ***	0.5 **	0.0	0.0
	Bench.	1.3 **	1.3 **	1.3 **	0.0	0.0	0.4 **	0.4 **	0.3 **	0.0	0.0	0.4 **	0.4 **	0.4 **	0.0	0.0
	Dev.	**0.1**	**0.1**	**0.2**	**0.0**	**-0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

Results show large overall relative standard errors in the sample of issuers, mostly for Debt to Equity and Debt to Assets ratios.

Although results in Table 9 are not conclusive for most of the industries, for the heavy-assets' industries, I find support in the Debt to Equity Ratio. There is a general worsening of Debt to Equity Ratios in the three years preceding the offer, even after adjusted for industry benchmark.

The remaining ratios show deviations from industry peers close to zero and therefore, do not support my hypothesis.

In summary, data shows that firms issuing mandatory convertible securities, although are in line with industry peers in debt to assets and debt to enterprise value ratios, have generally greater debt to equity ratios, mostly for heavy-assets' industries.

5.3 Static Trade Off Theory

Complementarily to the financial distress costs hypothesis, I now summary broader conclusions by analyzing Depreciations, Effective Corporate Tax Rates, Altman's Z-Scores, EBIT Interest Coverage and Debt to Equity Ratios.

Data presented in the tables including these variables show evidence that firms issuing mandatory convertibles have higher levels of depreciations and lower effective corporate tax rates as compared with its industry peers. This suggest a "tax exhaustion state" and less ability to benefit from tax advantages of additional debt.

These firms also have higher bankruptcy risk, since data shows Z-Scores consistently below 1.8 and, most of times, below its industry benchmark. Moreover, there is a consistent worsening of this score as firms approach the offering date, which brings consistency to the theory that equity-like mandatory convertibles are a capital source of last resort by suggesting these securities as a consequence of the deterioration of issuers' credit profile, and the resulting shrinkage of financing alternatives.

Closely related with issuers' bankruptcy risk is their ability to satisfy their debt service. For the Debt Service Coverage Ratio data shows high deviations from industry benchmark, for most of the industries, and high levels of deterioration, mostly in the year preceding the offer.

As for the financial stability, data is not so conclusive, showing mixed results for the most asset-light industries. For the heavy-assets industries, data is nonetheless more conclusive, showing higher debt to equity ratios which suggests once again that these firms are generally in a limit situation, where more debt would heavily aggravate their risk of bankruptcy.

In the light of these results, I am confident to confirm that data sustains MacKIE-MASON (1990) findings, specifically that firms prefer to raise capital using securities that bears the lowest probability of default whenever present value of financial distress costs exceeds the present value of expected tax benefits created by the issue.

Table 10 – Correlation of Buy-and-Hold Abnormal Returns

Correlations between Buy-and Hold Abnormal Returns and Zscore, EBIT Int. Cov. Ratio and Debt to Equity. Buy-and-Hold Abnormal Returns are computed in the 52 weeks after the issuance of mandatory convertible securities by sample firms and adjusted for industry average returns. The remaining variables are computed for the two years preceding the offer. Data was provided by Datastream and Thomson Reuters EIKON. Correlations are calculated over arithmetic averages and blank values are not considered as an occurrence.

	Zscore		EBIT Int. Cov. Ratio		Debt to Equity	
Year	**t-1**	**t-2**	**t-1**	**t-2**	**t-1**	**t-2**
Buy-and-Hold Abnormal Return	0.15	-0.10	-0.22	-0.34	0.17	0.35

Finally, Table 10 suggests abnormal returns are slightly higher for greater Z-Scores in the year preceding the offer, which is contrary to my hypothesis. Nevertheless, data supports my hypothesis if we consider Z-Scores two years before the offer.

As for the remaining variables analyzed, data shows higher buy-and-hold abnormal returns in the 52 weeks following the offer, for issuers with lower levels of EBIT Interest Coverage Ratios and higher Debt to Equity Ratios in the two years preceding the issuance, which although in line with Huckins (1999) hypothesis, is contrary to the results he obtained in his study.

5.4 Optimal Capital Structure Hypothesis

Research shows that managers tend to make decisions based on industry target benchmarks. Specifically, the optimal capital structure theory suggests that managers tend to pursue target indebtedness ratios comparing their firms with its industry peers.

Table 11 – Optimal Capital Structure

Values for sample firms, its industry peers, and deviations of the former to the latter using data relative to the end of the three fiscal years preceding the issuance of equity-like mandatory convertible securities by the sample firms. Debt to Equity refers to Debt to Equity Ratio. Input values to these ratios are provided by Thomson Reuters EIKON and Compustat. Changes in the variables over the period under analysis are presented in absolute values. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

		Debt to Equity				Change		
		t	t-1	t-2	t-3	t	t-1	t-2
Construction (N=3)	Sample	3.7 *	7.6 ***	4.1 *	1.8	-3.9	3.5	2.3
	Bench.	0.8 **	0.8 *	0.9 **	0.7 **	0.0	0.0	0.1
	Dev.	**2.9**	**6.8**	**3.2**	**1.1**	**-3.9**	**3.5**	**2.1**
Energy (N=5)	Sample	0.9 **	0.9 **	0.6 **	0.6 ***	0.1	0.2	0.1
	Bench.	0.8 *	0.6 **	0.5 *	0.5 **	0.2	0.1	0.0
	Dev.	**0.2**	**0.3**	**0.1**	**0.0**	**-0.1**	**0.2**	**0.0**
Healthcare (N=3)	Sample	2.5	3.6	3.5	3.1	-1.1	0.0	0.4
	Bench.	3.4 *	3.8 *	3.8 *	3.9 **	-0.4	0.0	-0.1
	Dev.	**-0.9**	**-0.2**	**-0.3**	**-0.7**	**-0.7**	**0.1**	**0.5**
Manufacturing (N=3)	Sample	4.3	13.2	6.1	4.9	-8.9	7.0	1.3
	Bench.	0.4 **	0.4 **	0.4 *	0.5 **	0.0	0.0	-0.1
	Dev.	**3.9**	**12.8**	**5.7**	**4.4**	**-8.9**	**7.1**	**1.3**
Retail Trade (N=4)	Sample	1.2 ***	1.2 ***	2.7 **	2.5	0.0	-1.4	0.2
	Bench.	0.8 **	0.6 **	0.6 **	0.8 *	0.2	0.1	-0.2
	Dev.	**0.4**	**0.6**	**2.1**	**1.7**	**-0.2**	**-1.5**	**0.4**
Technology (N=1)	Sample	-0.3 ***	-0.9 ***	-0.7 ***	-0.7 ***	0.6	-0.2	0.0
	Bench.	0.6 **	0.6 **	0.6 **	0.9 **	0.1	0.0	-0.3
	Dev.	**-0.9**	**-1.5**	**-1.3**	**-1.6**	**0.6**	**-0.1**	**0.3**
Telecommunications (N=2)	Sample	1.9 *	1.8 *	2.4 **	1.9 **	0.1	-0.6	0.4
	Bench.	1.0 **	0.9 *	0.8 *	0.8 *	0.1	0.1	0.0
	Dev.	**0.9**	**1.0**	**1.6**	**1.2**	**0.0**	**-0.6**	**0.4**
Utilities (N=10)	Sample	1.5 **	1.4 **	1.4 **	1.4	0.1	0.0	-0.1
	Bench.	1.3 **	1.3 **	1.3 **	1.3 **	0.0	0.0	0.0
	Dev.	**0.2**	**0.1**	**0.1**	**0.2**	**0.1**	**0.0**	**-0.1**

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

Consistent with Billingsley et al. (1994) results, I find some evidence of improvements in Debt to Equity Ratios for the year following the offer of mandatory convertibles and significant deviations from industry targets in the three years preceding the offer, mostly in the year immediately before the offer.

Nevertheless, and in line with Billingsley et al. (1994) results, conclusions about the decrease of this mismatch are mixed for some industries and do not support my hypothesis.

One explanation, besides the already mentioned large relative standard errors in the sample of issuers, could be that issuing firms have more pressing issues to address, such as financial distress or bad credit profiles, which are more urgent and has higher priority for deciding about what instruments to use when raising capital. More importantly, these factors are likely more limitative to what concerns their alternatives of external capital sources.

5.5 Staged-Investment Hypothesis

The staged-investment hypothesis suggests that equity-like mandatory convertibles can help firms with sequential financing needs to lower their financing costs by matching its maturities with the time of the new round of financing.

Table 12 – Capital Expenditures

Deviations of the issuing firms to it industry peers using data relative to the end of the fiscal year preceding the issuance of equity-like mandatory convertible securities by the sample firms. Capex to Revenues refers to Capital Expenditures standardized by Revenues, then multiplied by 100. Input values to this metric are provided by Thomson Reuters EIKON. Capex to Revenues values are presented in percentage and changes from the previous year are presented in percentage points. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

Industry	N	CAPEX to Revenues (%)	Change (p.p.)
		t-1	t-1
Construction	3	-0.12	0.46
Energy	5	26.73	14.02
Healthcare	3	0.08	-1.33
Manufacturing	3	-1.41	0.15
Retail Trade	4	13.21	-8.75
Technology	1	-0.64	0.42
Telecommunications	2	6.76	0.80
Utilities	10	-0.17	1.50

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

Deviations of Capital Expenditures from benchmark, in the year preceding the offer, present large relative standard errors, what could justify the mixed results.

In fact, data strongly supports this hypothesis for Energy and Retail Trade industries but is inconclusive for the remaining industries, presenting levels close to zero.

As for the changes of these deviations over the two years preceding the offer, they suggest small increases of Capital Expenditures for most of the firms with Capital Expenditures below benchmark.

One possible explanation is that issuing firms have in fact investment opportunities (as results for its industry suggest) but limited financial cushion, which leads them to have lower investments.

5.6 Cash-Flow Shortage Theory

The cash-flow shortage theory suggests that debt levels and firm values are positively correlated because of the signaling effect to the market of regular debt commitments.

Table 13 – Operating Cash Flows

Values for sample firms, its industry peers, and deviations of the former to the latter using data relative to the end of the fiscal year following and the three fiscal years preceding the issuance of equity-like mandatory convertible securities by the sample firms. Operating Cash Flows are computed as EBIT plus Depreciations minus Taxes, then multiplied by 100 and standardized by Revenues. Input values to this variable are provided by Compustat and Thomson Reuters EIKON. Relative standard errors are calculated as standard error of mean divided by mean and expressed as percentage.

		Operating Cash Flows				Change		
		t	t-1	t-2	t-3	t	t-1	t-2
Construction (N=3)	Sample	-8.3 ***	-19.9	-25.6	-16.1	11.6	5.7	-9.5
	Bench.	5.0 **	2.4 **	0.0 **	-0.1 **	2.6	2.4	0.0
	Dev.	**-13.3**	**-22.3**	**-25.6**	**-16.0**	**9.0**	**3.3**	**-9.5**
Energy (N=5)	Sample	43.7	43.6	45.6	40.5	0.1	-2.0	5.1
	Bench.	34.2 **	29.1 **	33.0 **	32.8 **	5.1	-3.9	0.2
	Dev.	**9.5**	**14.5**	**12.6**	**7.7**	**-5.0**	**1.9**	**4.9**
Healthcare (N=3)	Sample	12.0	9.4	9.5	8.8	2.6	-0.1	0.8
	Bench.	7.8 **	8.7 *	13.5 *	12.6 *	-0.9	-4.8	0.9
	Dev.	**4.2**	**0.7**	**-3.9**	**-3.8**	**3.5**	**4.6**	**-0.1**
Manufacturing (N=3)	Sample	8.5	8.1	1.4	4.2	0.4	6.7	-2.8
	Bench.	13.0 **	13.3 **	11.9 **	10.4 **	-0.3	1.4	1.5
	Dev.	**-4.5**	**-5.2**	**-10.5**	**-6.2**	**0.7**	**5.3**	**-4.3**
Retail Trade (N=4)	Sample	35.2	34.6	38.3	39.0	0.6	-3.7	-0.7
	Bench.	6.1 **	7.7 **	7.8 **	1.4 **	-1.6	-0.1	6.4
	Dev.	**29.0**	**26.9**	**30.5**	**37.6**	**2.1**	**-3.6**	**-7.1**
Technology (N=1)	Sample	10.2 ***	12.6 ***	-2.6 ***	5.5 ***	-2.4	15.2	-8.1
	Bench.	14.4 *	12.6 *	13.6 *	2.0 *	1.8	-1.1	11.6
	Dev.	**-4.2**	**0.1**	**-16.2**	**3.4**	**-4.2**	**16.3**	**-19.6**
Telecommunications (N=2)	Sample	20.7	22.9	26.7	26.8	-2.1	-3.8	-0.1
	Bench.	25.9 **	24.0 **	26.1 **	25.3 **	1.9	-2.1	0.9
	Dev.	**-5.2**	**-1.1**	**0.6**	**1.5**	**-4.0**	**-1.7**	**-0.9**
Utilities (N=10)	Sample	26.0	26.2	27.3	26.3	-0.2	-1.1	1.0
	Bench.	24.9 **	24.6 **	23.8 **	23.1 **	0.3	0.8	0.7
	Dev.	**1.0**	**1.5**	**3.5**	**3.2**	**-0.5**	**-2.0**	**0.3**

*** Indicates a relative standard error inferior to 10%.
** Indicates a relative standard error between 10% and 50%.
* Indicates a relative standard error between 50% and 100%.

To suit the cash-flow shortage theory to our equity-like mandatories analysis, I correlate the offered dividend yields with the abnormal results of a 52 week buy-and-hold investment in my sample firms' common stock.

For this test, data shows a non-statistically significant correlation of -0.04 therefore not supporting my hypothesis of a positive correlation.

In an attempt to disprove Miller and Rock (1985) I analyzed also the evolution of operating cash flows for issuing firms and how they compare to its industry peers.

Table 13 shows data with large relative standard errors, especially for the sample of issuers, which could justify the mixed results, both for the deviations from the benchmark and the trends of these deviations.

Nevertheless, conclusions are more consistent for absolute values, as more than half of the industries show a slight deterioration of issuers' operating cash flows in the two years before the offer takes place, and a slight improvement of the same variable afterwards.

Again, data suggests industry biasness as results, despite strong, are not consistent across industries and therefore no conclusions can be drawn.

5.7 Pecking Order Theory

In a world with information asymmetry, new equity issues are commonly seen as a "lemon" and discounted accordingly.

Being that equity-like mandatory convertibles are safer than straight equity, they should help to mitigate this information asymmetry effect. Therefore, when issuers are underpriced before the offer, market response to the issue should be more positive.

By regressing the 52 week buy-and-hold abnormal returns of the year following the offer and the three years preceding the offer I find that results do not support this hypothesis for the year preceding the offer (correlation of +0.36) and, despite supportive for my hypothesis, they are close to zero for the two years preceding the offer (correlations of -0.08 and -0.18, respectively).

One possible explanation is that the market is not efficient acknowledging these securities, as they are complex to price, and therefore discounts them as straight equity. Another possible explanation is the existence of some degree of biasness introduced from the fact that some of my sample firms are issuers of multiple offers during the period of analysis.

6. Summary and conclusion

My findings concerning the characteristics of firms issuing equity-like mandatory convertible securities are consistent with tax benefits, financial distress and static trade-off hypotheses.

Firms issuing mandatory convertibles, have greater non-debt tax shields and lower corporate tax rates, which supports Auerbach and Poterba (1987) findings that these firms are in a tax exhaustion state and is consistent with tax benefits hypothesis.

Mandatory convertible issuers also display higher default probabilities, lower levels of financial slack, liquidity, solvency and financial stability. More importantly, firms display a significant

deterioration of these metrics as closer they get to the offering date. These findings support the choice for a safer alternative to raise capital whenever firms are financially troubled, highly levered and/or generally incapable of complying with future fixed debt commitments that could jeopardize its solvency status. Also, its financial deterioration suggests an exhaustion of other capital raising alternatives at reasonable refinancing terms.

There is also some evidence that managers base their choices of instruments to raise capital on industry target benchmarks (e.g. indebtedness levels) and that equity-like mandatory convertible securities help firms with sequential financing needs to lower their financing costs by matching maturity dates with the time when the firm needs a new round of financing. Nevertheless, although the results for these hypotheses are consistent for some industries, conclusions consistent across all industries, suggesting industry interference for these hypotheses, which is not being analyzed in this work.

For future studies on this topic, there are still plenty of research opportunities in mandatory convertible securities, mostly in the future when they become more abundant and popular, since sample size has been a constant issue in this and similar previous studies.

In terms of issuers' characteristics, one important question to answer would be the role of the issuer's specific industry on the decision criteria of instruments to raise capital. Moreover, it would also be interesting to further explore the trade-offs of the choice for the mandatory convertible's three main features (conversion ratio, cap on capital appreciation and dividend yield). Finally, one open question that would probably be extremely hard to answer, given the available historical data, is: how these securities actually help its issuers solving their constraints in the long-run.

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Appendix

Details of sample (SDC Platinum database modified): Business and Industry

Issue Date	Issuer	Nation	Industry	Industry	Business Description	Primary NAIC Industry Code	Primary NAIC Industry Description	Main SIC Code	Primary SIC Code Description
26/06/14	AmSurg Corp	United States	Healthcare	Healthcare	Pvd ambulatory surgery svcs	62	Health Care and	8011	Offices and clinics of doctors of medicine
04/06/15	Anadarko Petroleum Corp	United States	Natural Resource	Energy	Oil,gas exploration,prodn co	21	Mining	1311	Crude petroleum and natural gas
06/01/10	Beazer Homes USA Inc	United States	Construction	Construction	Design, build homes	23	Construction	1531	Operative builders
04/05/10	Beazer Homes USA Inc	United States	Construction	Construction	Design, build homes	23	Construction	1531	Operative builders
10/07/12	Beazer Homes USA Inc	United States	Construction	Construction	Construct residential bldgs	23	Construction	1531	Operative builders
14/09/06	Bristow Group Inc	United States	Transportation	Retail Trade	Pvd helicopter transp services	48	Retail Trade	4522	Air transportation, nonscheduled
27/06/06	Chesapeake Energy Corp	United States	Natural Resource	Energy	Oil,gas exploration,prodn co	21	Mining	1311	Crude petroleum and natural gas
14/02/13	Cliffs Natural Resources Inc	United States	Natural Resource	Energy	Iron ore,coal mining company	21	Mining	1011	Iron ores
25/06/14	Dominion Resources Inc	United States	Electric Service	Utilities	Electric,gas utility company	22	Utilities	4911	Electric services
07/10/14	Dynegy Inc	United States	Electric Service	Utilities	Electric utility company	22	Utilities	4911	Electric services
10/06/14	Exelon Corp	United States	Electric Service	Utilities	Electric,gas utility company	22	Utilities	4931	Electric and other services combined
04/06/15	Frontier Communications Corp	United States	Telephone Commun	Telecommunication	Wired Telecommunications Carriers	51	Information	4813	Telephone communications, except radiotelephone
28/03/11	Goodyear Tire & Rubber Co	United States	Manufacturing	Manufacturing	Mnfr,whl tires,rubbers,resins	32	Manufacturing	3011	Tires and inner tubes
10/02/05	Huntsman Corp	United States	Manufacturing	Manufacturing	Mnfr,whl polymers,chemicals	32	Manufacturing	2816	Inorganic pigments
26/10/15	Kinder Morgan Inc	United States	Oil/Gas Pipeline	Retail Trade	Pvd gas transmission services	22	Utilities	4922	Natural gas transmission
19/11/14	Kindred Healthcare Inc	United States	Healthcare	Healthcare	Provide healthcare services	62	Health Care and	8051	Skilled nursing care facilities
14/09/10	NextEra Energy Inc	United States	Electric Service	Utilities	Provide electric services	22	Utilities	4911	Electric services
01/05/12	NextEra Energy Inc	United States	Electric Service	Utilities	Provide electric services	22	Utilities	4911	Electric services
11/09/15	NextEra Energy Inc	United States	Electric Service	Utilities	Provide electric services	22	Utilities	4911	Electric services
26/01/06	NRG Energy Inc	United States	Electric Service	Utilities	Electric,gas utility company	22	Utilities	4911	Electric services
23/03/05	PNM Resources Inc	United States	Electric Service	Utilities	Own,operates gas,elec co	22	Utilities	4911	Electric services
11/04/11	PPL Corp	United States	Electric Service	Utilities	Electric utility company	22	Utilities	4911	Electric services
26/01/05	Rite Aid Corp	United States	Retail	Retail Trade	Own,operate drug stores	44	Retail Trade	5912	Drug stores and proprietary stores
16/08/05	Rite Aid Corp	United States	Retail	Retail Trade	Own,operate drug stores	44	Retail Trade	5912	Drug stores and proprietary stores
14/01/15	Southwestern Energy Co	United States	Natural Resource	Energy	Oil, gas expln,prodn co	21	Mining	1311	Crude petroleum and natural gas
10/09/15	Stericycle Inc	United States	Sanitation	Utilities	Pvd waste disposal mgmt svcs	56	Administrative an	4953	Refuse systems
22/09/09	Tenet Healthcare Corp	United States	Healthcare	Healthcare	Own,operate hospitals	62	Health Care and	8062	General medical and surgical hospitals
09/12/14	T-Mobile US Inc	United States	Radio/TV/Telecom	Telecommunication	Wireless Telecommunications Carriers	51	Information	4812	Radiotelephone communications
30/07/14	Tyson Foods Inc	United States	Manufacturing	Manufacturing	Produce,whl poultry,meat prod	31	Manufacturing	2015	Poultry slaughtering and processing
22/02/11	Unisys Corp	United States	Manufacturing	Technology	Mnfr electronic info systems	54	Manufacturing	3571	Electronic computers
16/07/15	WPX Energy Inc	United States	Natural Resource	Energy	Crude Petroleum and Natural Gas Extraction	21	Mining	1311	Crude petroleum and natural gas

Details of sample (SDC Platinum database modified): Type of Security & Offering

Issue Date	Issuer	Nation	Issue Type	Issue Type Description	Convertible	Mandatory Conversion	Hybrid Type	Filling Date - SEC Form	Final Maturity - Sec Form	Offer Yield to Maturity (%)	Standard Convertible Offering Eligible Flag	Hybrid Security	Equity Related	Rights Offer Flag (Y/N)	Syndicated	Underlying Security Type	Primary Use of Proceeds
26/06/14	AmSurg Corp	United States	CVT	Convertible	Yes	Yes	5.250% Mandatory Convertible Preferred Stock, Series A-1	26/06/14	01/07/17	5.250%	Yes	No	Yes	No	Yes	Common Stock	Future Acquisitions
04/06/15	Anadarko Petroleum Corp	United States	CVT	Convertible	Yes	Yes	8,000,000 7.50% Tangible Equity Units	04/06/15	07/06/18	7.500%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
06/01/10	Beazer Homes USA Inc	United States	CVT	Convertible	Yes	Yes	7 1/2% Mandatory Convertible Subordinated Notes due 2013	06/01/10	15/01/13	7.500%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
04/05/10	Beazer Homes USA Inc	United States	CVT	Convertible	Yes	Yes	3,000,000 7.25% Tangible Equity Units	04/05/10	15/08/13	7.250%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
10/07/12	Beazer Homes USA Inc	United States	CVT	Convertible	Yes	Yes	7.50% Tangible Equity Units	10/07/12	15/07/15	7.500%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
14/09/06	Bristow Group Inc	United States	CVT	Convertible	Yes	Yes	5.50% Mandatory Convertible Preferred Stock	14/09/06	17/09/09	5.500%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
27/06/06	Chesapeake Energy Corp	United States	CVT	Convertible	Yes	Yes	6.25% Mandatory Convertible Preferred Stock	27/06/06	15/06/09	6.250%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
14/02/13	Cliffs Natural Resources Inc	United States	CVT	Convertible	Yes	Yes	27,000,000 Depositary Shares Each Representing a 1/40th Interest in a Share of 7.00% Series A Mandatory Convertible Preferred Stock, Class A	14/02/13	01/02/16	7.000%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
25/06/14	Dominion Resources Inc	United States	CVT	Convertible	Yes	Yes	18,000,000 2014 Series A Equity Units	25/06/14	01/07/17	4.875% + 1.5%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
07/10/14	Dynegy Inc	United States	CVT	Convertible	Yes	Yes	5.375% SERIES A MANDATORY CONVERTIBLE PREFERRED STOCK	07/10/14	01/11/17	5.375%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
10/06/14	Exelon Corp	United States	CVT	Convertible	Yes	Yes	20,000,000 Equity Units (purchase contract + note)	11/06/14	01/06/17	4% + 2.5%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
04/06/15	Frontier Communications Corp	United States	CVT	Convertible	Yes	Yes	17,500,000 shares of 11.125% Mandatory Convertible Preferred Stock, Series A	04/06/15	29/06/18	11.125%	Yes	No	Yes	No	Yes	Common Stock	Acquisition Fin.
28/03/11	Goodyear Tire & Rubber Co	United States	CVT	Convertible	Yes	Yes	5.875% Mandatory Convertible Preferred Stock	28/03/11	01/05/14	5.875%	Yes	No	Yes	No	Yes	Common Stock	Redeem Class of Shs
10/02/05	Huntsman Corp	United States	CVT	Convertible	Yes	Yes	5% Mandatory Convertible Preferred Stock	10/02/05	16/02/08	5.000%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
26/10/15	Kinder Morgan Inc	United States	CVT	Convertible	Yes	Yes	32,000,000 Depositary Shares Representing a 1/20th Interest in a Share of 9.75% Series A Mandatory Convertible Preferred Stock	26/10/15	26/10/18	9.750%	Yes	No	Yes	No	Yes	Common Stock	Paymnt on Borrowings
19/11/14	Kindred Healthcare Inc	United States	CVT	Convertible	Yes	Yes	150,000 7.50% Tangible Equity Units	19/11/14	01/12/17	7.500%	Yes	No	Yes	No	Yes	Common Stock	Reduce Indebtedness
14/09/10	NextEra Energy Inc	United States	CVT	Convertible	Yes	Yes	7,000,000 Equity Units (Initially Consisting of 7,000,000 Corporate Units)	14/09/10	01/09/13	1.9% + 5.10%	Yes	No	Yes	No	No	Common Stock	General Corp. Purp.
01/05/12	NextEra Energy Inc	United States	CVT	Convertible	Yes	Yes	12,000,000 Equity Units (Initially Consisting of 12,000,000 Corporate Units)	01/05/12	01/06/15	1.7% + 3.899%	Yes	No	Yes	No	No	Common Stock	General Corp. Purp.
11/09/15	NextEra Energy Inc	United States	CVT	Convertible	Yes	Yes	14,000,000 Equity Units (Initially Consisting of 14,000,000 Corporate Units)	11/09/15	01/09/18	2.36% + 4.011%	Yes	No	Yes	No	Yes	Common Stock	Investment / Loan
26/01/06	NRG Energy Inc	United States	CVT	Convertible	Yes	Yes	5.75% Mandatory Convertible Preferred Stock	26/01/06	16/03/09	5.750%	Yes	No	Yes	No	Yes	Common Stock	Acquisition Fin.
23/03/05	PNM Resources Inc	United States	CVT	Convertible	Yes	Yes	4,300,000 Equity Units (Initially Consisting of 4,300,000 Corporate Units 6.75% Equity Units	23/03/05	16/05/08	1.95% + 4.8%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
11/04/11	PPL Corp	United States	CVT	Convertible	Yes	Yes	17,000,000 Equity Units (Initially Consisting of 17,000,000 Corporate Units)	11/04/11	01/05/14	4.32% + 4.43%	Yes	No	Yes	No	Yes	Common Stock	Reduce Indebtedness
26/01/05	Rite Aid Corp	United States	CVT	Convertible	Yes	Yes	7.0% Series E Mandatory Convertible Preferred Stock	25/01/05	01/02/08	7.000%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
16/08/05	Rite Aid Corp	United States	CVT	Convertible	Yes	Yes	5.50% Series I Mandatory Convertible Preferred Stock	16/08/05	17/11/08	5.500%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
14/01/15	Southwestern Energy Co	United States	CVT	Convertible	Yes	Yes	30,000,000 Depositary Shares Representing a 1/20th Interest in a Share of 6.25% Series B Mandatory Convertible Preferred Stock	14/01/15	15/01/18	6.250%	Yes	No	Yes	No	Yes	Common Stock	Paymnt on Borrowings
10/09/15	Stericycle Inc	United States	CVT	Convertible	Yes	Yes	7,000,000 Depositary Shares Representing a 1/10th Interest in a Share of 5.25% Series A Mandatory Convertible Preferred Stock	09/09/15	15/09/18	5.250%	Yes	No	Yes	No	Yes	Common Stock	Acquisition Fin.
22/09/09	Tenet Healthcare Corp	United States	CVT	Convertible	Yes	Yes	7.00% Mandatory Convertible Preferred Stock	22/09/09	01/10/12	7.000%	Yes	No	Yes	No	Yes	Ordinary Shares	General Corp. Purp.
09/12/14	T-Mobile US Inc	United States	CVT	Convertible	Yes	Yes	5.50% Mandatory Convertible Preferred Stock, Series A	09/12/14	15/12/17	5.500%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
30/07/14	Tyson Foods Inc	United States	CVT	Convertible	Yes	Yes	30,000,000 Units 4.75% TANGIBLE EQUITY UNITS	30/07/14	15/07/17	4.750%	Yes	No	Yes	No	Yes	Common Stock	Acquisition Fin.
22/02/11	Unisys Corp	United States	CVT	Convertible	Yes	Yes	6.25% Mandatory Convertible Preferred Stock, Series A	22/02/11	01/03/14	6.250%	Yes	No	Yes	No	Yes	Common Stock	General Corp. Purp.
16/07/15	WPX Energy Inc	United States	CVT	Convertible	Yes	Yes	6.25% Series A Mandatory Convertible Preferred Stock	16/07/15	31/07/18	6.250%	Yes	No	Yes	No	Yes	Common Stock	Acquisition Fin.

Details of sample (SDC Platinum database modified): Issue Amounts

Issue Date	Issuer	Nation	Active Deal Flag (Y/N)	Currency	Principal Amount ($ mil)	Offer Price	Offer Yield to Maturity (%)	Conver-sion Premium	Conversion Price (US$)	Conversion Ratio	Conversion Max Ratio	Conversion Min Ratio	Conversion Shares Per Bond/ Prfd. Share	Years Until Conver-sion Begins	Years Until Conver-sion Expires	Filing Date	Issue Date	Final Maturity	Years to Final Matur-ity	Marketplace	Primary Exchange Where Issue Will Be Listed	Latest Fiscal Ending Date (LTM)	Date of Financial Period Before Offer
26/06/14	AmSurg Corp	United States	N	US	150	100	5.3%	22.5	55.1	1.8	2.2	1.8	1.8	3		26/06/14	26/06/14	01/07/17	3.0	U.S. Public	NONE	31/12/15	31/03/14
04/06/15	Anadarko Petroleum Corp	United States	Y	US	400	100	7.5%	20.0	69.8	14.3			14.3	3	3	04/06/15	04/06/15	07/06/18	3.0	U.S. Public	NONE	31/12/15	31/03/15
06/01/10	Beazer Homes USA Inc	United States	N	US	50	100	7.5%	22.0	5.6	178.3	5.4	4.5	178.3	3	3	06/01/10	06/01/10	15/01/13	3.0	U.S. Public	NYSE	30/09/15	30/09/09
04/05/10	Beazer Homes USA Inc	United States	N	US	75	100	7.3%	20.0	6.9	145.3			145.4	3.3	3.3	04/05/10	04/05/10	15/08/13	3.3	U.S. Public	NYSE	30/09/15	30/09/09
10/07/12	Beazer Homes USA Inc	United States	N	US	100	100	7.5%	22.0	3.5	283.3	8.6	7.0	283.3		3	10/07/12	10/07/12	15/07/15	3.0	U.S. Public	NYSE	30/09/15	30/09/11
14/09/06	Bristow Group Inc	United States	N	US	200	50	5.5%				1.4	1.2	na	3		14/09/06	14/09/06	17/09/09	3.0	U.S. Public	NYSE	31/03/16	30/06/06
27/06/06	Chesapeake Energy Corp	United States	N	US	500	250	6.3%				8.6	7.2	na	3		27/06/06	27/06/06	15/06/09	3.0	U.S. Public	NONE	31/12/15	31/03/06
14/02/13	Cliffs Natural Resources Inc	United States	N	US	675	25	7.0%				34.5	28.1	na	3		14/02/13	14/02/13	01/02/16	3.0	U.S. Public	NYSE	31/12/15	30/09/12
25/06/14	Dominion Resources Inc	United States	Y	US	900	100	6.4%	22.5	87.2	11.5	0.7	0.6	11.5	1	3	25/06/14	25/06/14	01/07/17	3.0	U.S. Public	NYSE	31/12/15	31/03/14
07/10/14	Dynegy Inc	United States	Y	US	400	100	5.4%	23.9	38.8				2.6			07/10/14	07/10/14	01/11/17	3.1	U.S. Public	NYSE	31/12/15	30/09/14
10/06/14	Exelon Corp	United States	Y	US	1,150	100	6.5%	25.0	43.8	1.1	1.4	1.1	22.9	1	3	11/06/14	10/06/14	01/06/17	3.0	U.S. Public	NONE	31/12/15	31/03/14
04/06/15	Frontier Communications Corp	United States	N	US	1,750	100	11.1%	17.5	5.9	17.0			17.0	3		04/06/15	04/06/15	29/06/18	3.1	U.S. Public	NASDQ	31/12/15	31/03/15
28/03/11	Goodyear Tire & Rubber Co	United States	N	US	435	50	5.9%	25.0	18.2		3.4	2.7	2.8	3	3	28/03/11	28/03/11	01/05/14	3.1	U.S. Public	NYSE	31/12/15	31/12/10
10/02/05	Huntsman Corp	United States	N	US	250	50	5.0%	23.0	28.3	1.8	2.2	1.8	1.8			10/02/05	10/02/05	16/02/08	3.0	U.S. Public	NYSE	31/12/15	31/12/04
26/10/15	Kinder Morgan Inc	United States	N	US	1,568	49	9.8%	17.5	32.4	1.8			30.9			26/10/15	26/10/15	26/10/18	3.0	U.S. Public	NYSE	31/12/15	30/09/15
19/11/14	Kindred Healthcare Inc	United States	Y	US	150	100	7.5%	17.5	23.2	50.6			43.1	1	3	19/11/14	19/11/14	01/12/17	3.0	U.S. Public	NYSE	31/12/15	30/09/14
14/09/10	NextEra Energy Inc	United States	N	US	345	100	7.0%	25.0	68.8	14.5	0.9	0.7	14.5	3	3	14/09/10	14/09/10	01/09/13	3.0	U.S. Public	NONE	31/12/15	30/06/10
01/05/12	NextEra Energy Inc	United States	N	US	600	95	5.6%	20.0	77.2	0.6			12.3		3	01/05/12	01/05/12	01/06/15	3.1	U.S. Public	NONE	31/12/15	31/12/11
11/09/15	NextEra Energy Inc	United States	Y	US	700	100	6.4%	20.0	114.4	8.7			8.7	1	3	11/09/15	11/09/15	01/09/18	3.0	U.S. Public	NONE	31/12/15	30/06/15
26/01/06	NRG Energy Inc	United States	N	US	500	250	5.8%	24.0	60.5		5.1	4.1	4.1			26/01/06	26/01/06	16/03/09	3.1	U.S. Public	NONE	31/12/15	31/12/05
23/03/05	PNM Resources Inc	United States	N	US	215	50	6.8%	22.0	32.7				1.5			23/03/05	23/03/05	16/05/08	3.1	U.S. Public	NYSE	31/12/15	31/12/04
11/04/11	PPL Corp	United States	N	US	850	100	8.8%	22.5	31.0	32.3	2.0	1.6	32.3		3	11/04/11	11/04/11	01/05/14	3.1	U.S. Public	NYSE	31/12/15	31/12/10
26/01/05	Rite Aid Corp	United States	N	US	113	49	7.0%	50.0	5.4		14.0	9.3	9.2		3	25/01/05	26/01/05	01/02/08	3.0	U.S. Public	NONE	27/02/16	27/11/04
16/08/05	Rite Aid Corp	United States	N	US	115	25	5.5%	20.0	5.3	4.7			4.7	3.3	3.3	16/08/05	16/08/05	17/11/08	3.3	U.S. Public	NONE	27/02/16	28/05/05
14/01/15	Southwestern Energy Co	United States	N	US	1,500	50	6.3%	17.5	27.0		37.0	43.5	1.9			14/01/15	14/01/15	15/01/18	3.0	U.S. Public	NYSE	31/12/15	30/09/14
10/09/15	Stericycle Inc	United States	N	US	700	100	5.3%	25.0	136.3				7.3			09/09/15	10/09/15	15/09/18	3.0	U.S. Public	NASDQ	31/12/15	30/06/15
22/09/09	Tenet Healthcare Corp	United States	N	US	300	1000	7.0%	20.0	7.0	142.5	170.9	142.5	142.5	3	3	22/09/09	22/09/09	01/10/12	3.0	U.S. Public	NYSE	31/12/15	30/06/09
09/12/14	T-Mobile US Inc	United States	Y	US	870	50	5.5%	20.0	31.2		1.9	1.6	1.6	1		09/12/14	09/12/14	15/12/17	3.0	U.S. Public	NYSE	31/12/15	30/09/14
30/07/14	Tyson Foods Inc	United States	Y	US	1,500	100	4.8%	25.0	47.3	21.2	1.3	1.1	21.2	0.7	3	30/07/14	30/07/14	15/07/17	3.0	U.S. Public	NYSE	03/10/15	28/06/14
22/02/11	Unisys Corp	United States	N	US	225	100	6.3%	22.0	45.7	2.2	2.7	2.2	2.2	3	3	22/02/11	22/02/11	01/03/14	3.0	U.S. Public	NYSE	31/12/15	31/12/10
16/07/15	WPX Energy Inc	United States	N	US	350	50	6.3%	20.0	12.1				4.1	3		16/07/15	16/07/15	31/07/18	3.0	U.S. Public	NYSE	31/12/15	30/06/15

Details of sample (SDC Platinum database modified): Financials

Issue Date	Issuer	Nation	% Price Change 1 Week	% Price Change 4 Weeks	% Price Change 13 Weeks	% Price Change Last 52 Weeks	% Price Change YTD	Average Daily Volume Last 10 Days	Average Daily Volume last 4 Weeks	Average Daily Volume last 52 Weeks	Book Value Per Share Before Offer	Book Value per Share (Annual)	Cash and Equivalents (Annual)	Cash Flow (Annual)	Close Price last month	Common Equity Before the Offering ($ mil)	Common Stock Equity (Annual)	Cost of Sales (Annual)	Cost of Sales (Qtrly)	Current Dividend Yield (Dividend Yield)	Current Price/ Earnings Ratio (P/E Ratio)	Current Ratio (Annual)
26/06/14	AmSurg Corp	United States	-11.2	-13.3	-22.5	-14.8	-21.4	14,111	10,921	8,403	24.07	39.17	120.2	760.4	59.75	782.4	2126.8	175.8	49.7	0.00	23.70	1.40
04/06/15	Anadarko Petroleum Corp	United States	-3.3	-3	12.7	-10.4	23.4	51,849	44,451	64,470	32.16	25.22	1401	-1652	59.44	16332	12819	3560	509	1.20	-5.20	1.00
06/01/10	Beazer Homes USA Inc	United States	-10.1	-13.9	4.7	-29.6	-12.8	5,589	5,158	7,533	4.94	19.13	290.5	41.6	10.23	196.6	630.4	1355	382.3	0.00	0.70	5.40
04/05/10	Beazer Homes USA Inc	United States	-10.1	-13.9	4.7	-29.6	-12.8	5,589	5,158	7,533	4.94	19.13	290.5	41.6	10.23	196.6	630.4	1355	382.3	0.00	0.70	5.40
10/07/12	Beazer Homes USA Inc	United States	-10.1	-13.9	4.7	-29.6	-12.8	5,589	5,158	7,533	2.62	19.13	290.5	41.6	10.23	198.4	630.4	1355	382.3	0.00	0.70	5.40
14/09/06	Bristow Group Inc	United States	-12	-27.5	-5.9	-71.1	-61.2	9,168	9,601	9,020	24.62		104.3	118.6	10.01	575.7	1499.2	1309.4	302.2	7.20	-3.80	1.50
27/06/06	Chesapeake Energy Corp	United States	-13.3	-7.7	6.8	-24.8	19.1	637,526	525,890	397,091	15.21	-1.39	1191	2268	5.51	5812.2	-924	3165	663	0.00	-0.30	0.70
14/02/13	Cliffs Natural Resources Inc	United States	-9.7	-7.2	-31.4	97.5	244.9	138,887	99,879	88,189	44.47	-17.66	293	1.1	5.52	6336.8	-2712.7	1639.2	442	0.00	52.90	1.70
25/06/14	Dominion Resources Inc	United States	0.9	-1.1	-5.8	4.2	10.1	20,952	21,000	26,710	20.1	21.25	1117	4380	75.2	11699	12664	3304	583	3.50	24.40	0.50
07/10/14	Dynegy Inc	United States	-13.3	-12.8	-28.6	-44.8	-20	40,266	33,906	33,188	20.42	21.57	644	125	10.65	2050	2521	2028	493	0.00	-2.10	2.40
10/06/14	Exelon Corp	United States	2.2	-0.2	-10.9	19.1	19.8	47,849	46,748	59,621	26.27	28.04	8072	7880	34.07	22568	25793	11547	3336	3.80	24.80	1.70
04/06/15	Frontier Communications Corp	United States	1	-3.1	-22.5	-23.5	-15.8	146,175	194,491	167,991	3.5	4.81	9380	1185	4.02	3507	5614	3275	1595	8.50	-10.10	5.40
28/03/11	Goodyear Tire & Rubber Co	United States	-10.5	-12.4	-1.3	-14.9	-14.5	41,297	33,514	32,812	2.65	14.68	1491	1602	29.03	644	3920	11466	2555	0.90	26.20	1.20
10/02/05	Huntsman Corp	United States	7	8.5	14.2	29.1	49.5	30,624	31,204	36,945		6.08	269	693	16.95	1142.7	1442	8052	1978	3.70	16.00	2.00
26/10/15	Kinder Morgan Inc	United States	-3.2	-11.7	0.5	-26.1	35.4	196,833	174,541	235,237	15.94	15.75	1243	4827	20.43	35514	35119	6452	1547	2.20	-156.70	0.70
19/11/14	Kindred Healthcare Inc	United States	-2.5	-6.3	-21.9	-32.5	-24	7,679	7,103	9,726	19.51	17.9	205.4	156.7	9.85	1260.3	1499.9	383.2	99.3	4.30	15.50	1.40
14/09/10	NextEra Energy Inc	United States	1.6	2.8	-2	22.6	21.2	16,944	19,175	20,551	32.53	48.97	1501	6729	128	13529	22574	5327	960	2.50	23.30	0.70
01/05/12	NextEra Energy Inc	United States	1.6	2.8	-2	22.6	21.2	16,944	19,175	20,551	35.92	48.97	1501	6729	128	14943	22574	5327	960	2.50	23.30	0.70
11/09/15	NextEra Energy Inc	United States	1.6	2.8	-2	22.6	21.2	16,944	19,175	20,551	47.21	48.97	1501	6729	128	21338	22574	5327	960	2.50	23.30	0.70
26/01/06	NRG Energy Inc	United States	-10.6	-8.1	-25.6	-17.5	-9.7	62,833	56,402	59,678	11.22	8.62	3847	1567	10.63	1811	2707	10755	1756	3.10	-0.80	1.70
23/03/05	PNM Resources Inc	United States	0.2	-2.4	-7	15.2	6	7,221	5,680	5,583	18.19	20.78	49.9	425.4	32.85	1099.6	1654.8	0	0	2.70	4,039.50	0.60
11/04/11	PPL Corp	United States	1.5	-2.2	-10.3	-1.2	-0.4	39,447	53,274	45,525	16.98	14.72	836	3100	34.34	8210	9919	1659	311	4.00	14.50	0.70
26/01/05	Rite Aid Corp	United States	-5.8	-13.8	-5.3	-17.4	-17	211,707	209,299	142,278	-0.66		124.5	865.3	6.71	-342.5	581.4	22401.2	5971	0.00	57.60	1.50
16/08/05	Rite Aid Corp	United States	-5.8	-13.8	-5.3	-17.4	-17	211,707	209,299	142,278	-0.2		124.5	865.3	6.71	-104.3	581.4	22401.2	5971	0.00	57.60	1.50
14/01/15	Southwestern Energy Co	United States	-10.2	-24.8	-28.6	-12.2	36.3	237,373	183,542	166,367	12.16	5.85	18	1468	10.39	4293	2282	851	234	0.00	-1.20	0.60
10/09/15	Stericycle Inc	United States	6.6	-0.5	-11.7	-35.8	-35.4	18,630	15,673	11,164	23.14	32.17	55.7	397.5	80.09	1962.7	2729.9	1658.1	510.9	0.00	29.10	1.30
22/09/09	Tenet Healthcare Corp	United States	-13.9	-10.6	-33.8	-39.1	-36.9	28,568	29,106	21,394	2.38	7.02	356	2664	19.71	286	691	11974	3089	0.00	-11.90	1.20
09/12/14	T-Mobile US Inc	United States	5.6	5.6	6.5	30.1	26	69,189	46,474	38,736	17.99	20.23	7580	6581	49.73	14525	16557	14898	3975	0.00	29.60	1.60
30/07/14	Tyson Foods Inc	United States	0.3	-6.6	-5.2	60.3	33.3	26,651	35,950	36,376	19.02	26.89	688	2198	70.85	6694	9691	36814	7957	0.80	16.00	1.50
22/02/11	Unisys Corp	United States	2.9	7.8	6	-23.9	-7.7	12,112	8,115	7,778	-21.98	-27.85	365.2	70.6	10.45	-937.3	-1389.7	2294.1	522.8	0.00	-10.70	1.20
16/07/15	WPX Energy Inc	United States	-10.9	-14.3	13.1	57.3	88	68,858	67,746	100,258	21.28	11.61	414	366	10.86	4367	3196	293	144	0.00	-1.10	1.20

Issue Date	Issuer	Nation	EBIT Last Twelve Months Before Offering (US$ mil)	EBITDA Before Offering (US$ mil)	EBITDA After Offering (US$ mil)	EPS Five Years Prior	Five Year EPS Growth	EPS Four Years Prior	EPS Three Years Prior	EPS Two Years Prior	Financials: EPS Last Twelve Months Before Offering ($)	Financials: EPS Last Twelve Months After Offering ($)	LTM Dil. EPS from Cont. Ops.	High Price Last 52 Weeks	Low Price Last 52 Weeks	Latest Fiscal Revenue	LTM Revenue	Market Value/ Market Capitalization	Market Value Before Offer ($ mil)	Net Income After Taxes Before Offering (US$ mil)
26/06/14	AmSurg Corp	United States	333	368		1.55	8.70	1.71	1.71	1.65	2.16		3.30	87.29	57.75	2,567	2837.7	3,274,900	1,488.70	69
04/06/15	Anadarko Petroleum Corp	United States	-1,826	2,856	2,524	-0.28	Loss	1.53	-5.32	4.73	-4.65	-4.96	-10.24	72.24	28.16	9,486	7883	33,506,100	43,064.80	-2,354
06/01/10	Beazer Homes USA Inc	United States				5.70	Neg.	5.87	8.89	-10.70			11.40	15.15	6.07	1,627	1822.8	331,490	915.20	-189
04/05/10	Beazer Homes USA Inc	United States				5.70	Neg.	5.87	8.89	-10.70			11.40	15.15	6.07	1,627	1822.8	331,490	1,368.90	-189
10/07/12	Beazer Homes USA Inc	United States	-67	-56		8.89	Neg.	-10.70	-24.69	-4.90	-2.77		11.40	15.15	6.07	1,627	1822.8	331,490	1,281.20	-205
14/09/06	Bristow Group Inc	United States	91	134	141	1.32	18.20	1.84	1.77	2.29	2.58	2.84	-3.01	37.19	9.17	1,716	1617.9	352,390	814.00	63
27/06/06	Chesapeake Energy Corp	United States					na						-14.42	8.15	1.50	12,140	10315	4,164,480	10,497.60	1,447
14/02/13	Cliffs Natural Resources Inc	United States	1,038	1,544		2.55	25.90	2.57	4.76	1.63	6.40		0.26	8.45	1.20	2,013	1791.4	1,256,770	5,192.40	918
25/06/14	Dominion Resources Inc	United States	3,363	4,765	4,598	3.16	-3.70	2.17	4.76	2.45	2.72	2.64	3.20	78.97	64.54	11,683	11046	45,883,590	40,937.90	1,581
07/10/14	Dynegy Inc	United States	-165	179	187	122.85	Neg.	-933.66	-237.10	-1,656.02	-2.60	-2.65	-8.23	22.01	7.20	3,676	4153	1,257,330	3,138.90	-260
10/06/14	Exelon Corp	United States	3,715	5,759		4.13	-15.50	4.09	3.87	3.75	2.11		1.33	37.70	25.09	29,447	30187	30,707,960	30,063.90	1,813
04/06/15	Frontier Communications Corp	United States	759	1,957		0.38	-43.00	0.23	0.15	0.13	0.04		-0.49	5.85	3.81	5,576	6800	4,610,170	5,096.80	39
28/03/11	Goodyear Tire & Rubber Co	United States	419	1,071	1,251	1.21	Neg.	-1.86	0.65	-0.32	-0.89	-0.27	1.24	35.30	24.31	16,443	15480	7,293,800	3,563.90	-216
10/02/05	Huntsman Corp	United States	359	896			na				-1.43		0.85	18.12	7.46	10,299	9869	4,048,670		-228
26/10/15	Kinder Morgan Inc	United States	3,633	5,880	4,722	0.70	10.00	-0.06	0.46	0.23	0.47	0.10	-0.16	27.78	11.20	14,401	13300	45,093,760	2,227.90	1,074
19/11/14	Kindred Healthcare Inc	United States	101	263		1.46	Neg.	1.62	1.44	-1.16	-1.66		0.73	15.66	7.96	7,055	7225.5	771,540	1,287.10	-89
14/09/10	NextEra Energy Inc	United States	3,170	5,057	5,491	2.46	16.50	2.29	3.23	3.27	4.53	4.96	5.59	131.98	96.19	17,486	16674	58,824,330	22,937.80	1,854
01/05/12	NextEra Energy Inc	United States	3,313	5,157		3.23	9.20	3.27	4.07	3.97	4.59		5.59	131.98	96.19	17,486	16674	58,824,330	26,769.60	1,923
11/09/15	NextEra Energy Inc	United States	5,342	8,101	8,457	3.97	13.30	4.74	4.59	4.56	6.54	6.97	5.59	131.98	96.19	17,486	16674	58,824,330	43,075.60	2,910
26/01/06	NRG Energy Inc	United States	213	408	553	1.10	-26.00	1.35		26.24	0.33	0.19	-19.40	18.32	8.80	14,674	13318	3,351,430	3,928.60	77
23/03/05	PNM Resources Inc	United States	189	321		1.29	2.60	1.69	2.51	1.07			0.01	36.15	26.56	1,439	1369.8	2,580,770	1,618.00	88
11/04/11	PPL Corp	United States	1,813	2,593		1.92	3.10	2.29	2.63	2.47	2.17		2.60	39.92	32.08	7,669	7454	23,107,320	11,348.00	938
26/01/05	Rite Aid Corp	United States	446	699		0.54	-24.00	-4.34	-5.15	-1.68			0.13	8.30	6.48	30,737	32638.3	6,849,390	1,858.60	109
16/08/05	Rite Aid Corp	United States	401	645		-4.34	Pos.	-5.15	-1.68	-0.31			0.13	8.30	6.48	30,737	32638.3	6,849,390	2,302.60	267
14/01/15	Southwestern Energy Co	United States	1,322	2,231		1.64	7.00	-0.10	1.73	1.82	2.15		-11.62	15.59	5.00	2,924	2375	4,800,940	8,748.80	757
10/09/15	Stericycle Inc	United States	511	620	578	2.03	14.50	2.39	2.69	3.08	3.49	3.12	2.75	128.94	72.89	2,986	3544.3	6,622,210	12,027.00	301
22/09/09	Tenet Healthcare Corp	United States	746	1,126	1,038	-12.04	Pos.	-15.40	-5.28	-7.40	1.92	0.92	-2.29	35.95	18.86	18,634	19630	1,905,030	2,812.70	227
09/12/14	T-Mobile US Inc	United States	1,393	5,712		0.84	-35.00	0.98	1.08	1.64	0.15		1.58	51.65	33.23	32,053	35314	40,615,710	22,757.70	126
30/07/14	Tyson Foods Inc	United States	1,532	2,001	1,878	0.24	84.20	-1.44	2.06	1.97	2.76	2.37	4.13	77.05	42.89	41,311	38196	21,145,440	13,305.60	988
22/02/11	Unisys Corp	United States	325	575	558	-50.90	Pos.	-8.10	-2.30	-3.60	3.85	2.97	-0.91	14.68	6.72	3,015	2888.9	510,850	1,596.30	167
16/07/15	WPX Energy Inc	United States	492	1,376	1,228	0.69	22.40	-6.57	-1.53	-1.12	1.56	0.19	-7.84	13.92	2.53	1,470	1099	3,715,380	2,277.40	318

Issue Date	Issuer	Nation	Op. Profit After Depr. (EBIT) (Annual)	Financials: Price Earnings Ratio Before Offering (%)	Price/ Book Value Before Offer	Shares Outstanding Before Offering	Shares Outstanding After the Offering	Shares Outstanding Change	Total Assets (Annual)	Total Assets Before the Offering ($ mil)	Total Equity (Annual)	Total Revenues Before Offering (US$ mil)	Moody's Rating
26/06/14	AmSurg Corp	United States	573	46.228	1.9	32,505,000	32,505,000	0	6,547	2,184	2,294	1,082	
04/06/15	Anadarko Petroleum Corp	United States	-1,731	-21.519	2.64	507,900,000	508,000,000	100,000	46,414	52,973	12,819	14,622	
06/01/10	Beazer Homes USA Inc	United States	52		0.93	198,966,580	198,966,580	0	2,096	2,022	630	1,005	
04/05/10	Beazer Homes USA Inc	United States	52		1.39	198,966,580	198,966,580	0	2,096	2,022	630	1,005	
10/07/12	Beazer Homes USA Inc	United States	52	-36.101	1.29	377,941,980	377,941,980	0	2,096	1,975	630	742	
14/09/06	Bristow Group Inc	United States	45	19.38	1.41	23,385,473	23,491,378	105,905	3,204	1,240	1,499	809	
27/06/06	Chesapeake Energy Corp	United States	-718		1.91	361,364,831	361,364,831	0	17,357	18,052	2,138	5,826	B1
14/02/13	Cliffs Natural Resources Inc	United States	130	3.906	0.82	142,491,645	142,491,645	0	2,136	14,685	-1,981	5,642	
25/06/14	Dominion Resources Inc	United States	3,564	36.742	3.5	582,000,000	583,000,000	1,000,000	58,797	50,586	12,664	13,227	
07/10/14	Dynegy Inc	United States	94	-38.462	1.53	100,382,015	124,436,941	24,054,926	11,539	4,981	2,921	2,022	
10/06/14	Exelon Corp	United States	4,391	47.432	1.33	859,000,000	859,000,000	0	95,384	79,468	25,986	26,043	Baa3
04/06/15	Frontier Communications Corp	United States	981	2544.529	1.45	1,003,308,000	1,002,469,000	-839,000	27,084	18,721	5,614	4,989	
28/03/11	Goodyear Tire & Rubber Co	United States	1,547	-56.18	5.53	242,938,949	244,144,455	1,205,506	14,298	15,572	3,920	18,832	B1B2B3
10/02/05	Huntsman Corp	United States	706	-34.965			0	0	9,402	9,886	1,442	11,486	
26/10/15	Kinder Morgan Inc	United States	4,511	105.422	0.06	2,227,894,462	2,229,223,864	1,329,402	78,781	80,350	35,119	14,678	
19/11/14	Kindred Healthcare Inc	United States	295	-60.274	1.02	64,612,000	64,612,000	0	6,415	4,025	1,500	5,001	
14/09/10	NextEra Energy Inc	United States	4,660	22.075	1.7	415,841,893	418,420,348	2,578,455	82,479	51,209	22,574	14,847	
01/05/12	NextEra Energy Inc	United States	4,660	20.697	1.79	416,000,000	416,000,000	0	82,479	57,188	22,574	14,827	
11/09/15	NextEra Energy Inc	United States	4,660	15.282	2.02	452,000,000	461,000,000	9,000,000	82,479	77,201	22,574	17,781	
26/01/06	NRG Energy Inc	United States	979	757.576	4.34	80,701,888	68,487,638	-12,214,250	32,715	7,405	3,009	2,708	
23/03/05	PNM Resources Inc	United States	292		1.47	60,464,595	60,464,595	0	6,009	3,416	1,666		
11/04/11	PPL Corp	United States	2,831	46.083	1.49	448,538,509	448,538,509	0	39,301	32,837	9,919	8,907	Baa3
26/01/05	Rite Aid Corp	United States	813		-5.43	520,602,938	520,602,938	0	9,738	5,678	581	16,872	Caa2Caa1
16/08/05	Rite Aid Corp	United States	813		-22.07	520,952,399	520,952,399	0	9,738	5,848	581	16,794	Caa2Caa1
14/01/15	Southwestern Energy Co	United States	-64	23.276	2.03	354,489,342	353,125,665	-1,363,677	8,110	9,177	2,282	3,939	
10/09/15	Stericycle Inc	United States	661	28.62	6.12	84,960,791	84,942,134	-18,657	7,078	4,527	2,730	2,724	
22/09/09	Tenet Healthcare Corp	United States	1,494	520.833	2.46	480,800,029	481,100,028	299,999	22,906	7,928	691	8,735	
09/12/14	T-Mobile US Inc	United States	1,902	342.466	1.57	807,297,844	807,297,844	0	62,436	55,115	16,557	28,237	
30/07/14	Tyson Foods Inc	United States	2,140	36.295	1.99	352,000,000	376,000,000	24,000,000	23,004	12,055	9,691	36,379	
22/02/11	Unisys Corp	United States	-55	25.974	-1.7	42,648,839	43,033,189	384,350	2,029	2,841	-1,390	4,020	
16/07/15	WPX Energy Inc	United States	-656	32.161	0.52	204,800,000	275,300,000	70,500,000	8,350	7,962	3,535	1,868	